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ABSTRACT

This annual report of the Pennsylvania Council on Vocational Education focuses on the activities and recommendations of the council for 1990. It includes recommendations to the State Board of Education and the Governor that describe the board's major concerns, including declining student enrollments in vocational education programs and possible options to be considered during the revision of Chapter 5, Curriculum, and Chapter 6, Vocational Education, of the Pennsylvania School Code. A brief review of the status and trends in vocational education with current data and statistics relating to vocational education students and programs is also included. The statistical review includes 14 tables reporting on total enrollment in vocational education programs, vocational program offerings, enrollment trends, special population enrollments, special needs students, adult enrollments, disadvantaged and handicapped students, student organizations, student placements and earnings, Job Training Partnership Act services, and customized job training for Pennsylvania employers. The report features an overview of almost 30 new or innovative vocational education programs operating in the state. (KC)

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Pennsylvania Council on Vocational Education

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21ST Annual Report 1990

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Robert P. Casey, Governor

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Joseph F. Bard, Commissioner

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Dr. Charles R. Fuget, Commissioner

BUREAU OF VOCATIONAL AND ADULT EDUCATION

Dr. Ferman B. Moody, Director

It is the policy of the Pennsylvania Council on Vocational Education not to discriminate on the basis of sex, handicap, race, age, religion, marital status, veteran status, or national or ethnic origin in its employment, educational programs or activities or other agency-administered programs.

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PENNSYLVANIA COUNCIL
ON VOCATIONAL EDUCATION

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ANDRÉE P. PHILLIPS
Chair

FREDERICK C. KERR
Vice Chair

GLENN A. SCHAEFFER
Financial Secretary

DENNIS P. RHEN
Executive Director

Dear Fellow Citizens:

On behalf of the Pennsylvania Council on Vocational Education (PACVE), I am pleased to present the 1990 Annual Report of our activities and accomplishments.

Council's recommendations to the State Board of Education and the Governor describe our major concerns including declining student enrollments in vocational education programs and possible options to be considered during the revision of Chapter 5, Curriculum, and Chapter 6, Vocational Education, of the Pennsylvania School Code. A brief review of the status and trends in vocational education with current data and statistics relating to vocational education students and programs is also included. The Report features an overview of almost thirty new or innovative vocational education programs operating in Pennsylvania.

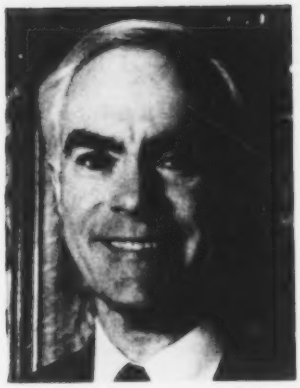
The Council hopes the report will be informative and useful, and that it will contribute to understanding the vocational education system and the role of PACVE in Pennsylvania. Questions or comments concerning the Report may be directed to the Council.

Sincerely,

Andrée P. Phillips

Andrée P. Phillips
Chair

COMMONWEALTH OF PENNSYLVANIA
OFFICE OF THE GOVERNOR
HARRISBURG



THE GOVERNOR

GREETINGS:

The Pennsylvania Council on Vocational Education is helping the Commonwealth develop the most important tool needed to meet the challenges facing our state as we prepare to enter the 21st Century -- a world class workforce.

Only by preparing our young men and women to become full partners in the global economy can we hope to remain competitive in today's international marketplace.

Vocational education provides a combination of academic and vocational training which allows students to develop their abilities to think creatively, define problems and determine solutions.

This blend of academic and vocational skills enables our young people to apply what they learn in the classroom to the challenges of the workplace.

The efforts of the Council, together with those of our business, education and government leaders, will help carry Pennsylvania's students into the 21st Century well prepared to compete with the best the world has to offer.

Sincerely,

Robert P. Casey
Governor

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF EDUCATION
333 MARKET STREET
HARRISBURG, PA 17126-0333

SECRETARY OF EDUCATION
717-787-5820

Friends of Vocational Education:

We are now in the eighth year of sustained interest in education reform. Since the publication of A Nation At Risk in 1983, hundreds of reports and thousands of recommendations have been issued which aim to renew and advance public education in America. While much good has come of these efforts, there is much more which needs attention. With regard to vocational education, which is an integral and essential component of our education system, I believe that the near future will bring unparalled opportunities to strengthen and extend programs and services in this Commonwealth.

The reenactment of the Carl D. Perkins Act presents one such opportunity. The reformulated federal statute strongly supports themes which we have worked to achieve, such as the integration of academic content more directly into vocational education coursework, and more effectively linking secondary and postsecondary vocational education through the "tech-prep" concept. Further, the statute provides the development of performance standards to measure and strengthen program effectiveness at all levels.

Perhaps even greater opportunities lie in the State Board of Education's review of major regulations governing not only vocational education, but also curriculum requirements and student assessment. Recognizing the interrelatedness of these three rules, the Board has undertaken a process which will enable it to consider each as it pertains to the others, thereby achieving a reformulation which avoids the pitfalls of separate consideration. In this way, some of the real and perceived conflicts between Chapters 5 and 6 can be considered and addressed in an appropriate manner. A stronger and more cohesive system should result from these deliberations.

Further, the Department's and the State Board's renewed interests in provision of postsecondary occupational training through technical institutes is an opportunity to bring quality public programs to Pennsylvanians residing in areas of this Commonwealth without ready access to them. The need to establish technical institutes has been discussed for many years; it is now time to act. At the same time, we need to increase funding for adult programming which for years has been fixed at levels substantially below the true costs of instruction.

As the Department moves ahead in the next year to address these and other critical issues affecting vocational education, I view the Pennsylvania Council on Vocational Education as a key partner in the shaping and formulation of policies and programs. I applaud your efforts, and urge your continuing involvement in these important issues throughout the upcoming year.

Sincerely,

Donald M. Carroll, Jr.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF EDUCATION
333 MARKET STREET
HARRISBURG, PENNSYLVANIA 17126-0333

COMMISSIONER FOR BASIC EDUCATION

Dear Citizens:

Federal projections indicate that by the year 2000 only 20 percent of available jobs will require a college education. Obviously, vocational education will be expected to play an increasingly important roll in assuring a high quality of life for Pennsylvania's citizens.

Is vocational education ready to assume an expanded roll within the state's educational system? A state of readiness surely will exist when vocational education is accepted within the mainstream of educational endeavor, and I believe prerequisites for that acceptance are an expanded mission to prepare students for further occupational education and a commitment to contributing significantly to the basic academic development of students. In this regard, all of education can benefit from vocational education's experience with applied methodologies and with outcome-based curricula.

Pennsylvania Council on Vocational Education has been, and will continue to be, a catalyst for improvement of the Commonwealth's educational system. May our partnership be long and fruitful!

Sincerely,

Joseph F. Bard

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF EDUCATION
333 MARKET STREET
HARRISBURG, PA 17126-0333

DEAR CITIZEN:

THE BUREAU OF VOCATIONAL TECHNICAL AND ADULT EDUCATION, HAS EXPERIENCED A RICH AND PROUD HISTORY OF PROVIDING QUALITY VOCATIONAL TECHNICAL EDUCATION SERVICES TO MEET THE EMPLOYMENT NEEDS OF YOUTH AND ADULTS STATEWIDE. TODAY, HOWEVER CONDITIONS WITHIN OUR SOCIETY SUCH AS DECLINING VOCATIONAL ENROLLMENTS, A MAJOR EMPHASIS ON ACADEMIC ACHIEVEMENT, THE NEED FOR RESTRUCTURING OUR AVTS AS SECONDARY DELIVERY SYSTEMS, AND A SEARCH FOR A NEW VOCATIONAL IDENTITY HAVE CAUSED UNPRECENDETED PRESSURES AND CHALLENGES FOR CHANGE AND NEW DIRECTIONS IN VOCATIONAL EDUCATION.

THE BUREAU HAS ACCEPTED THESE CHALLENGES AND REDIRECTED ITS MISSION TO AN EMPHASIS ON PROMOTING QUALITY VOCATIONAL TECHNICAL AND ADULT EDUCATION TO SUPPORT INDIVIDUALS, BUSINESS, AND INDUSTRY TO SUCCEED IN A GLOBAL ECONOMY. THE PRIMARY WAY TO ACCOMPLISH THIS BROADER MISSION IS BY INTEGRATING ACADEMIC AND VOCATIONAL EDUCATION INTO A TOTAL EDUCATIONAL SYSTEM, PLACING A STRONG EMPHASIS ON BUSINESS/ INDUSTRY INVOLVEMENT IN EDUCATION, PROVIDING FOR MORE TECHNOLOGICAL SKILLS ACQUISITION, SUPPORTING MORE COLLABORATION/ARTICULATION BETWEEN SECONDARY AND POSTSECONDARY AGENCIES, AND BY ENSURING THAT RELEVENT AND EFFECTIVE EDUCATIONAL PROGRAMS ARE AVAILABLE TO STUDENTS AND ADULTS OF ALL AGES.

THE BUREAU WELCOMES THE OPPORTUNITY TO WORK IN COLLABORATION WITH THE COUNCIL OF VOCATIONAL EDUCATION IN FULFILLING ITS NEW MISSION. AS WE WORK TOGETHER, I AM CONFIDENT THAT WE CAN FIND THE MEANS TO PROVIDE QUALITY ACADEMIC/ VOCATIONAL EDUCATIONAL COMPENTENCIES FOR ALL PENNSYLVANIAN'S WHETHER THEY WISH TO ENTER THE LABOR MARKET OR TO MATRICULATE INTO A HIGHER EDUCATION INSTITUTION.

WE COMMEND THE COUNCIL FOR THEIR EFFORTS TO IMPROVE VOCATIONAL TECHNICAL EDUCATION IN THE COMMONWEALTH.

SINCERELY,

FERMAN B. MOODY, DIRECTOR
BUREAU OF VOCATIONAL AND ADULT
EDUCATION

THE PENNSYLVANIA COUNCIL ON VOCATIONAL EDUCATION

The Pennsylvania Council on Vocational Education (PACVE) conducted its twenty-first year of activities in 1989-90. The Council was reestablished by the Carl D. Perkins Vocational Education Act (PL 98-524) in 1985. The Governor appoints the Council members. The 13 members included seven individuals from the private sector and six members from education. Two of the private sector members represented organized labor. Secondary and postsecondary education as well as career guidance and counseling were also represented by Council membership.

The members of the 1989-90 Council were:

Andrée P. Phillips, Chair
President/CEO, Radiant Steel Products Company
Williamsport

Glenn A. Schaeffer, Vice-Chair
Business Manager, Local Union No. 143 IBEW
Harrisburg

Thomas W. O'Brien, Financial Secretary
Director, Center for Vocational Personnel Preparation
Indiana University of Pennsylvania, Indiana

Rosanne S. Blackburn
Instructor, Health Occupations
Upper Bucks AVTS, Sellersville

Richard deLone
DeLone, Kahn and Associates
Philadelphia

Dr. Kenneth Gray
Associate Professor, Vocational School Administration
Pennsylvania State University, University Park

Valerie Harvey
Owner, Omni Tech Enterprises
Philadelphia

Dr. Marion B. W. Holmes
Executive Director, Career and Vocational Education
School District of Philadelphia, Philadelphia

Frederick C. Kerr
Director, Training and Program Development
Pennsylvania Farmers' Association, Camp Hill

Dr. Marvin Lazerson
Dean, Graduate School of Education
University of Pennsylvania, Philadelphia

Henry F. Plummer, Jr.
Training Coordinator
Steamfitters' Local Union 420, Philadelphia

Paul A. Sammartino
Teacher, Vocational Education/Special Education
Pittsburgh School District, Pittsburgh

Robert L. Wernicki
Assistant Vice President
First National Bank of Pennsylvania, Erie

Andrée P. Phillips

Glenn A. Schaeffer

Thomas W. O'Brien

Rosanne S. Blackburn

Richard deLone

Dr. Kenneth Gray

Valerie Harvey

Dr. Marion B. W. Holmes

Frederick C. Kerr

Dr. Marvin Lazerson

Henry F. Plummer, Jr.

Paul A. Sammartino

Robert L. Wernicki

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Responsibilities

The Carl D. Perkins Vocational Education Act of 1984 (PL 98-524) gave certain responsibilities to the Pennsylvania Council on Vocational Education. These responsibilities are:

- conduct at least one public meeting each year at which the public is given an opportunity to express views concerning the vocational education program of the state.
- meet with the State Board of Education to advise on the State Plan for Vocational Education.
- review and comment on the State Plan prior to its submission to the United States Secretary of Education.
- advise the State Board of Education and make reports to the Governor, the business community and the general public of the state concerning:
  1. policies the state should pursue to strengthen vocational education (with particular attention to programs for the handicapped); and,
  2. initiatives and methods the private sector could undertake to assist in the modernization of vocational education programs.
- analyze and report on the distribution of spending for vocational education in the state.
- analyze and report on the availability of vocational education activities and services within the state.
- furnish consultation to the State Board of Education on the establishment of evaluation criteria for vocational education programs within the state.
- submit recommendations to the State Board on the conduct of vocational education programs conducted in the state which emphasize the use of business concerns and labor organizations.
- assess the distribution of financial assistance furnished under the Vocational Education Act, particularly with the analysis of the distribution of financial assistance between secondary and post-secondary vocational education programs.
- recommend procedures to the State Board to ensure and enhance the participation of the public in the provision of vocational education at the local level within the state, particularly the participation of local employers and local labor organizations.
- report to the State Board on the extent to which special populations are provided with equal access to quality vocational education programs.
- evaluate at least once every two years the vocational education program delivery systems assisted under this Act, and under the Job Training Partnership Act, in terms of their adequacy and effectiveness in achieving the purposes of each of the two Acts.
- make recommendations to the State Board on the adequacy and effectiveness of the coordination that takes place between vocational education and the Job Training Partnership Act.
- advise the Governor, the State Board, the State Job Training Coordinating Council, the Secretary of Education and the Secretary of Labor of these findings and recommendations.
- consult with the State Board on the development of model curricula to address state labor market needs. Technical committees are to develop an inventory of skills that may be used by the State Board to define state-of-the-art model curricula.

The Pennsylvania Council on Vocational Education, through its various activities, addresses and met each of these responsibilities.

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PACVE Activities

The members and staff of the Pennsylvania Council on Vocational Education conducted a variety of activities in 1989-90 to fulfill the responsibilities of the Carl D. Perkins Vocational Education Act of 1984. The Council also participated in other activities not specifically assigned to it by federal law, but which were determined to be in the interest of strengthening vocational education in the Commonwealth.

During 1989-90, PACVE:

- adopted five recommendations for presentation to the State Board of Education. These recommendations addressed:
  1. integration of academic and vocational education.
  2. adoption of standards to establish technical institutes.
  3. business-labor-vocational education partnerships.
  4. vocational education personnel development.
  5. length of the school year.
- presented PACVE's 1988-89 recommendations to the State Board of Education.
- represented Pennsylvania at national meetings and conferences, participating in committee meetings and other activities with organizations including the Naticnal Association of State Councils on Vocational Education and the American Vocational Association.
- represented PACVE at statewide and regional meetings and conferences, participating in activities with other educational organizations, including the Pennsylvania Vocational Association, Pennsylvania Association of Vocational Administrators, State Job Training Coordinating Council, Pennsylvania Chamber of Business and Industry, Pennsylvania School Boards Association, Pennsylvania Business Roundtable, Pennsylvania Occupational Information Coordinating Committee, Council for Public Education, and the Community College Occupational Deans Committee.
- participated in meetings and other activities of various committees and groups from the Pennsylvania Department of Education and/or the Bureau of Vocational and Adult Education, including the State Board of Education, Perkins Committee, Pennsylvania Vocational Education Conference, Ad Hoc Committee on Clustering, Agricultural Education Steering Committee, and other groups formed to address specific concerns on a short-term basis.
- maintained liaison with various educational, governmental, labor and business organizations.
- participated in local AVTS advisory councils as requested.
- participated in meetings and activities with professional trade councils and associations.
- distributed handbooks for local and occupational advisory committees.
- prepared, published and disseminated three issues of PACVE Update, a publication reporting on PACVE activities and matters of interest in vocational education.
- made presentations to local advisory committees and to educational organizations on vocational education.
- attended Department of Education sponsored workshops on vocational education for special needs populations.
- selected a recipient of the Local Advisory Committee Award of Excellence.
- selected a recipient for the Occupational Advisory Committee Recognition program.
- visited members of Pennsylvania's Congressional delegation in Washington, D.C.
- attended Congressional subcommittee meetings in Washington, D.C.
- submitted written comments regarding the State Plan for Vocational Education to the Bureau of Vocational and Adult Education.
- presented workshops at the Pennsylvania Vocational Education Conference.
- attended Changing Technology Conference in Albany, New York.
- prepared a paper describing vocational education for an in-service meeting for new superintendents.

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Recommendations to the State Board of Education

The Pennsylvania Council on Vocational Education adopted five recommendations on vocational education at its June, 1990 meeting. The Carl D. Perkins Vocational Education Act (PL94-482) requires State councils to advise the State Board on policies the State should pursue to strengthen vocational education in the State.

The recommendations were formally presented to the State Board of Education in September, 1990, and were also sent to the Governor, the Pennsylvania General Assembly, and other policymakers. The recommendations were also published in the Council's newsletter, PACVE Update.

The Council based its recommendations on Council members' expertise, staff research, consultations with policymakers and other informed persons, and comments made by the public at meetings of the Council.

The State Board of Education informed the State Council that it will formally respond to the recommendations of the Council.

PENNSYLVANIA COUNCIL ON VOCATIONAL EDUCATION 1990 RECOMMENDATIONS

Commendation

The Pennsylvania Council on Vocational Education (PACVE) commends the Department of Education for the financial support it has given the Vocational Education Public Relations Project.

Rationale

The Pennsylvania Council on Vocational Education has recommended several times that the Department of Education undertake activities to disseminate information about vocational education programs and to publicize vocational education. PACVE made these recommendations in recognition of the "image" problem that vocational education has among some citizens. PACVE recognized that information needs to be provided about the opportunities that vocational education affords students and the success that can be achieved through the completion of vocational education.

PACVE is very pleased that the Department of Education has decided to use a portion of available federal vocational education funds to support this activity.

For other students, including those preparing to enter postsecondary education, participation in a vocational education classroom can supplement academic instruction. Prospective engineering students could profit from the experience in a machine shop, or a prospective electrical engineer could benefit from a course in electricity. Prospective medical students, likewise, could benefit from the experience of child care activities. The same principle could be applied to individuals preparing for other professions.

In recent years, the Commonwealth of Pennsylvania has been concerned about the level of basic skills of its students. Its response to this concern has been to, in general, increase academic requirements for graduation. National studies indicate that where such efforts have been made (e.g., increasing the required number of academic credits for graduation), many students have been forced to choose between academic courses and vocational education. In many instances, students have stopped participating in high quality vocational education programs in favor of repetitive academic courses needed for graduation.

PACVE believes that a more positive approach would be to encourage the integration of academic and vocational skills instruction, so that students have an opportunity to master basic academic skills and prepare for gainful employment.

Recommendation 1: Academic-Vocational Education Integration

The Pennsylvania Council on Vocational Education recommends that the State Board of Education promote, through its regulations in Chapter 5: Curriculum and Chapter 6: Vocational Education and in the Comprehensive State Plan for Vocational Education, the integration of Academic and Vocational Education.

Rationale

This recommendation repeats a theme the Pennsylvania Council on Vocational Education has previously emphasized. PACVE believes vocational education needs to be more academic and academic education needs to place greater emphasis on the use and application of basic academic skills. Students enrolled in vocational education programs need to develop

their skills in academic subject areas and thus can benefit from the integration of vocational and academic education. Learning is enhanced if skills are taught in a context which has meaning to students. Instruction in certain academic areas is made more relevant, and is more quickly learned in some instances, if it is applied in vocational classrooms, shops and laboratories. Vocational education facilities and instruction can demonstrate the application, for example, of mathematical and scientific principles which otherwise might remain abstract.

Recommendation 2: Technical Institutes

The Pennsylvania Council on Vocational Education recommends that the State Board of Education adopt standards for the establishment of Technical Institutes.

(This repeats a recommendation adopted previously by PACVE.)

Rationale

Pennsylvania has a well-documented need for additional postsecondary and adult vocational education programs. A need exists throughout our economy to provide additional training services to maintain and improve the occupational skills of the work force. To a significant extent, Pennsylvania's ability to remain competitive and productive depends on the skills of its citizens. These skills must be constantly updated and refined.

Pennsylvania Department of Education estimates suggest that 40 percent of Pennsylvania's population does not have access to comprehensive postsecondary vocational education facilities. Technical institutes, by utilizing existing vocational education facilities, particularly area vocational-technical schools, could assist Pennsylvania in meeting its need for skilled workers.

The Community College Act of 1963 provided the framework for the establishment of as many as 28 community colleges. However, the choice of whether to establish a community college was left to local education and government officials. Half of the community college areas established in the State did not organize a community college.

Recently, one of the 14 community colleges ceased operations as a community college to assume a new status and role. Consequently, as noted above, large areas of the State and much of its population do not have access to systematic postsecondary vocational education programming.

An estimated 70 percent of the jobs being created require some postsecondary education, but not necessarily a baccalaureate degree. This demonstrates that there is a need for training beyond the high school level, but the need is not solely, or even primarily, for liberal arts and general education programs.

Small businesses find it particularly difficult in rural and nonmetropolitan areas to provide needed training to employees. The ability of employees to secure training would be enhanced by the presence of technical institutes. By making training available in areas currently underserved, technical institutes would also help to attract new businesses to smaller towns and rural areas and permit the expansion of existing businesses.

Technical institutes, as provided for in draft standards prepared by the Pennsylvania Department of Education, would enable underserved areas of the state, if they so desired, to create a technical institute to provide needed services. PACVE urges the State Board of Education to proceed with the adoption of standards (regulations) so that the process of establishing technical institutes may proceed.

Recommendation 3: Business-Labor-Vocational Education Partnerships

The Pennsylvania Council on Vocational Education recommends that the State Board continue to require participation of local employers, organized labor and other citizens in the formulation and delivery of vocational education programs.

Rationale

Vocational education depends upon the participation of representatives of the private sector, other employers, labor and the general public to remain responsive to local labor market needs. The participation of such individuals is encouraged through such means as

1) requiring that local advisory committees and occupational advisory committees are established as a condition for program approval;
2) requiring the support of employers for the initiation of new programs; and
3) requiring the support of advisory committees for certain grant requests.

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The State Board of Education and the Department of Education are commended for the establishment and enforcement of these requirements. There is, however, a need for a renewed effort to increase the participation of business, labor and the general public in vocational education. Their assistance is needed to insure that vocational education programs are appropriate for the economy now and in the future. Their help is also needed to assure that the curriculum, equipment, tools and instruction are appropriate to the existing and future economy.

The State Board of Education and the Department of Education are urged to expand efforts not only to assure that advisory committees exist, but to assure that advisory committees are active and involved in the delivery of local vocational education programs. The Pennsylvania Council on Vocational Education offers its assistance to the Department of Education to implement such a process. The Council suggests that the Department of Education actively seek the assistance of business and labor organizations (e. g., the Pennsylvania Chamber of Business and Industry, the Pennsylvania Business Roundtable, Pennsylvania AFL-CIO) for their support of this effort.

Recommendation 4: Vocational Education Personnel

The Pennsylvania Council on Vocational Education recommends that the State Board of Education carefully review regulations governing the recruitment, education, certification and employment of Vocational Education Personnel, with particular attention to be given to vocational education teachers, and that the Department of Education provide expanded leadership in developing Vocational Education Personnel.

Rationale

PACVE recognizes that some vocational education programs in Pennsylvania are experiencing problems in securing and retaining adequately prepared vocational education teachers. In some cases, this is caused by a lack of adequately skilled instructors. In other situations, it is caused by declining vocational education enrollments which force program cutbacks, discouraging prospective teachers from entering the teaching profession.

A lack of an adequate supply of teachers may also be caused by the inability of potential or experienced vocational instructors to pass portions of the examinations required of all teachers, regardless of their instructional area. Individuals who possess occupational competencies and who pass the occupational competency test may fail to achieve passing test scores on the general knowledge, basic skills (e.g., English, mathematics) or pedagogical skills portion of the test. While it is agreed that all teachers, including vocational teachers, need to possess appropriate levels of basic sills, the inability of some vocational teachers, particularly those who graduated from high school many years ago and completed college courses (required certification) focused on the acquisition of pedagogical skills, to pass the general education examinations does present a problem.

These procedures create problems not only for teachers pursuing certification, but may also discourage prospective teachers from leaving their occupation for the classroom, for there is no assurance that they may remain in the classroom if they do not pass the examination. Such individuals are discouraged from paying the fees required for their "occupational competency test" if they are unsure that they will be able to pass the other required tests.

Therefore, the State Board of Education and the Department of Education should carefully review the issues of vocational education teacher supply and the process of certifying vocational education teachers. To further address this problem, the Department of Education should actively pursue a program of vocational education teacher recruitment and development, through its support of professional development institutions, inservice programs and other activities.

The State Board of Education and the Department of Education are also urged to examine the process of "updating and upgrading" the occupational and pedagogical skills of vocational education teachers and administrators. For vocational education to remain relevant and productive, its teachers and administrators need to be provided with opportunities to upgrade their skills through work experiences, demonstrations, discussions, workshops and other in-service opportunities. PACVE urges the Department of Education to take a leadership role in assuring that a systematic program to meet these needs is provided to all vocational educators.

Recommendation 5: Length of School Year

The Pennsylvania Council on Vocational Education recommends to the General Assembly of Pennsylvania that it amend the school code to provide for a longer school year. This could be accomplished by providing schools a state reimbursement for up to 200 days or 1000 hours of instruction or other supervised educational activities for elementary students and 1100 hours of instruction or other supervised educational activities for secondary school students.

Rationale

Establishing a minimum number of days for the school year is at best an unscientific process. There is no magic number of school days which can be said, with any certainty, to be the "best." For many years Pennsylvania, as have most other states, has required that public schools be in session for 180 days. The school year should be increased to provide for addi-

tional learning opportunities for students, provide increased flexibility to students to schedule required courses and reduce the period of "skills regression" which occurs when students are not in school.

It is suggested that the issue be addressed by providing schools with a reimbursement for as many as 200 days of instruction or other supervised educational activities using the existing formula, with any needed modifications, for the Equalized Subsidy for Basic Education (ESBE). School districts would not be required to increase the number of school days in the year. However, if a school district decided to lengthen its school year, the reimbursement from the State should be proportionately increased.

The existing school calendar was developed when Pennsylvania had a largely agrarian economy. The vacation time closely matched the growing season and harvest time so that youths would be available for work in the fields, around the farm, and in processing agricultural products. That rationale no longer exists as a justification for the organization of the school calendar. Today, fewer than five percent of the State's population is directly involved in food production and processing.

Today's economy needs individuals with higher levels of knowledge and skills than previously required. To a great extent acquisition of such knowledge and skills is related to "time on task." This suggests that students either need to expand the number of years of instruction prior to full-time entry into the work force, or use a larger part of the available days in a year for school attendance. Most industrialized nations support a substantially longer school year than does the United States, including Pennsylvania. Therefore, it is probable that over the course of the basic education experience students in other industrialized nations will have more learning experiences, and will have presumably learned more, than their American, and Pennsylvanian, counterparts.

Much of the time potentially available for instruction is used in an extended summer vacation. Many students, however, already use part of their vacation time for activities which have an educational component, such as foreign field trips, instructional camps in the arts, sciences, and other academic disciplines, recreational camps, and sports camps. Many students also willingly terminate their vacations to participate in organized practices for Autumn sports, band practice and similar activities. This suggests that there is already a large amount of relatively informal, but nevertheless educational, activity undertaken during the vacation period. Many of these activities which have an educational benefit are not available, due to cost factors, to economically disadvantaged students.

The additional instruction time could be used, for example, to make vocational education available to students, either to enhance their vocational education program, explore vocational education for the first time, enhance their academic program though applications of knowledge in the vocational education program, or to gain access to vocational education programs that may not be available during the course of the normal school year.

The time has arrived for the General Assembly to give serious consideration to supporting and facilitating an expansion of the school year.

State Board of Education Response to 1990 PACVE Recommendations

The State Board of Education prepared a written response to these PACVE recommendations. However, due to the length of that response it has not been included in this document. Copies of the response may be obtained by contacting the Council office.

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PACVE POSITIONS ON SPECIAL ISSUES

The Commonwealth of Pennsylvania supports an educational system for the purpose of preparing educated, informed citizens who are productive in society and the work force. At a time when reports and public concern focus on the work force crisis in the United States and the shortage of qualified workers, assuring the provision of occupational/vocational preparation is of paramount importance.

During 1989-1990, PACVE members and staff directed many resources to examining two important educational issues that will have a direct impact on vocational education in Pennsylvania. Both issues will be affected by the revision of school code regulations, scheduled to occur in 1991. To make educators, parents and the general public more aware of the impact of these issues on vocational education specifically, PACVE developed position statements on these issues. A brief summary of each statement follows.

PENNSYLVANIA SCHOOL CODE REVISIONS TO CHAPTERS 5 AND 6

In 1989, the Pennsylvania State Board of Education initiated a process to review existing regulations governing curriculum and vocational education. These regulations are found in Chapters 5 and 6 respectively of the Pennsylvania School Code. They define curriculum and graduation requirements for students and govern student access to classes and programs.

Current regulations became effective in September, 1985. As required by law, they are to be reviewed, evaluated, and if so determined, revised in 1991. Comments and concerns regarding these regulations were received by the Pennsylvania Council on Vocational Education (PACVE) through Council sponsored public hearings, a Council directed survey of school superintendents and directors of vocational education programs, and through Council participation on various educational committees and task forces.

While many issues surfaced from a Council directed review of these regulations, Council has chosen to focus issues which are most significant for improving the quality of vocational education in Pennsylvania. Recommendations approved by the Council regarding Regulations for Chapter 5: Curriculum and Chapter 6: Vocational Education were submitted to the State Board of Education. A summary of those recommendations follows.

The State Board of Education should ensure the following:

1. *Career Education* - Include in Chapter 5: Curriculum, a provision requiring instruction in career exploration and planning be provided to all students in elementary and secondary grades.
   Retention of "Work" Goal - Retain the "Work" Goal in the "12 Goals of Quality Education", which must be addressed in the long-range plans of school districts and area vocational-technical schools.
   Scheduling Plan - Retain the provision in Chapter 5: Curriculum (Regulation 5.13(2)) which requires each school district to adopt a scheduling plan which affords an opportunity for interested students to participate in an area vocational-technical school program.
2. *Identification of a career or education objective* - Require in Chapter 5 that all students identify a tentative education and/or career objective prior to selecting courses at the high school level. This choice should be made no later than the beginning of the tenth grade, and should be reviewed by each student prior to each school year. Course selections should be related to the individual student's education/career objective. Nothing in such a policy or regulation should be interpreted as prohibiting a student from changing his/her tentative career or education objective after the initial selection.

3. *Coordination of Chapters 5 and 6* - Assure Chapters 5 and 6 are consistent with each other. The requirements of one chapter should not impinge on the implementation of the other, or make it impossible for the regulations in the other chapter to be met.
4. *Integration of academic and vocational education programs* - Include in Chapter 5: Curriculum, a regulation requiring school districts and area vocational-technical schools to explain, in their long-range plans, how vocational education courses and academic courses are to be integrated.
5. *Retention of minimum hours requirement* - Retain the requirement that a vocational education program provide at least 720 hours of instruction in planned courses. Local education agencies should be permitted to provide the required instructional hours in any sequence or combination of courses deemed appropriate by the local education agency. Competency-based education should continue to be required as the primary mode of instruction in vocational education.
6. *Substitution of vocational education credits for "arts" credit* - Permit substitution of an approved vocational education program unit of credit for one credit of art in the arts and humanities requirement of Chapter 5.
7. *Substitution of credits* - Include in Chapter 5 a provision enabling students to continue to receive credit for academic competencies achieved in an approved vocational education program, as provided for in Basic Education Circular (BEC) 45-87.
   Review of programs for academic content - Include in Chapter 5 the provision that a committee comprised of academic and vocational educators be established by local education agencies to review planned vocational education courses to determine their academic content for the purpose of granting academic credits for vocational education courses.
8. *Single diploma* - Continue to issue a single high school diploma, without regard to the choice of courses made by a student.
9. *Advisory Committees* - Continue to include in Chapter 6: Vocational Education Regulations a provision requiring all vocational education programs to establish and maintain a citizens advisory committee. Existing requirements in Chapter 6 that each local education agency providing vocational education programs, as well as each program area, organize and operate respectively, a local advisory committee and occupational advisory committees should be retained.

DECLINING STUDENT ENROLLMENTS IN SECONDARY VOCATIONAL EDUCATION

While the total high school population has been declining in Pennsylvania, the percentage of high school students enrolled in occupationally-oriented vocational education has been declining at a much more rapid rate. From 1984-85 to 1988-89, public school enrollments in grades 10 through 12 declined 9.6 percent. During the same period, vocational education enrollments in grades 10 through 12 declined 37.8 percent. Council considers this trend unacceptable and believes alternative policies should be considered and implemented to stabilize and then increase secondary vocational education enrollments.

Partially in response to recommendations of the National Commission on Excellence in Education, regulations for academic and vocational education programs were implemented in the 1985-86 school year in Pennsylvania. These changes increased the number of hours of instruction in social studies, mathematics, science and English required for graduation. Subsequently, Pennsylvania experienced a decline in vocational education enrollments. The decline has continued with each succeeding school year.

A review of data on Pennsylvania students in recent years indicates the new regulations negatively affected students in the following ways:

1. Increased graduation requirements reduced the amount of time available for students to schedule elective or enrichment courses. In Pennsylvania, vocational education is an elective program.
2. Increased graduation requirements and specific course requirements limited the flexibility of schools and students to schedule vocational education courses.
3. Increased graduation requirements and vocational education program approval requirements placed a heavier burden on vocational students than on nonvocational students. (Participation in a two-year "approved" vocational education program requires a student to complete 22 credits, and a three-year program requires 25 credits for graduation; nonvocational students need only complete 21 credits to meet the State's graduation requirements.) Vocational students also may need to sacrifice involvement in school clubs and other extracurricular activities in order to schedule all required courses.

Other situations and conditions may have contributed to the decline in vocational education enrollments by negatively influencing students' choice of programs. Vocational education teachers and administrators contend there is too much emphasis on a strict academic high school program and preparation for college. Consequently, many students and their parents are not aware of vocational program options or of the content of vocational education programs. Many citizens and decision makers appear to place a higher value on academic high school programs that prepare students for a four-year college or university program.

The percent of Pennsylvania's students enrolled in a two or four-year college or university grew from 42 percent in 1979-80 to 56 percent in 1988-89. However, 44 percent of the 1989 high school graduating class did not enroll in a two or four-year college or university.

Other factors contributing to declining secondary vocational education enrollments include the following:

1. Retention of students in academic classrooms of the "home" high schools helped preserve the positions of high school academic teachers.
2. Enrollments in area vocational-technical schools are sometimes limited by "quotas" established by sending school districts. These limits tend to depress vocational education enrollments.
3. The recession of the early 1980's and the subsequent decline of manufacturing industries and other traditional sources of employment in Pennsylvania may have caused many citizens to place greater value on preparation for postsecondary education than on the development of occupational skills.
4. Increased career opportunities for females have apparently caused a decline in secondary vocational education enrollments. Many females who previously trained to work as clerks, secretaries and in general office positions now have access to positions requiring baccalaureate degrees. While this demonstrates increased opportunities for women, the need for clerks and secretaries continues to grow.
5. Anecdotal evidence suggests that a stigma has developed about vocational education which causes some individuals to regard it as a program designed to serve less academically able, handicapped and disadvantaged students. As this stigma developed, students who possessed strong academic abilities were frequently discouraged from enrolling in vocational education and instead were directed to college preparatory education.

The decline in secondary vocational education enrollments has been both a cause and effect of a reduction in the number of approved vocational education programs in the Commonwealth. Lower enrollments have led to discontinued programs. The intricacies of the vocational education program approval/reapproval process requires extensive paperwork and time. The low subsidy grants in approved programs makes it difficult for schools, especially those with

small staffs and fewer resources, to justify the time and energy spent on the process.

Because local education agencies are not required to seek program approval, many school districts offer nonapproved vocational education courses. These students are not included in the data collection process and cannot be assured they are receiving a quality program of vocational education.

Although declining enrollments in secondary vocational education are not unique to Pennsylvania, the Council believes there is a need for policymakers to recognize the extent of the problem and establish appropriate policies to insure that high quality and relevant vocational education programs are available to all Pennsylvania students.

ON-SITE COMPLIANCE REVIEW FOR VOCATIONAL EDUCATION

In Pennsylvania, vocational education programs are operated and evaluated according to criteria of Chapter 339 Standards to Chapter 6 Regulations of the State Board of Education, effective since September 1986. Procedures require an on-site visit to selected school districts and area vocational-technical schools to review compliance with these Regulations and Standards.

For the on-site compliance review, review team members used a checklist to record noncompliance and compliance with the requirements. These requirements include Chapter 339 Standards to Vocational Education Regulations and the "U.S. Office for Civil Rights (OCR) Guidelines for Vocational Education Programs." Items in the Standards and Regulations compliance checklist can be grouped into two major categories. They are: (1) items pertaining to the overall institution and (2) items pertaining to individual programs within the school. As in the previous year, the Standards and Regulations portion had 67 items for review and the OCR portion had 68 items.

It is difficult to make direct comparisons of findings from year to year. Conclusions should not be drawn without an in-depth analysis of various institutional reports. It is not unusual for a school to have areas of noncompliance since even very minor violations must be reported as noncompliance, even if the situation occurs in only one program. Following the review, each school develops a plan to remedy noncompliance items.

During the 1989-90 school year, 27 school districts and seven area vocational-technical schools (AVTSs) were selected for on-site compliance reviews.

Summary of School District Findings

Of the 27 school districts selected for review, ten school districts had only the Standards and Regulations evaluation, 20 school districts had only the OCR evaluation and three school districts had both evaluations. Twelve items of noncompliance concern regulations regarding competency-based curriculum and the establishment, use and structure of occupational advisory committees. The two OCR items most often cited were related to the dissemination of information.

Vocational program administration items most frequently not complied with include:

1. Programs consist of planned vocational courses, including performance standards.
2. Competency-based program/course planned and managed by the teacher.
3. Public notice of special provisions for Title IX and Section 504 programs and staff must be available to visually impaired persons.
4. Vocational programs include leadership and attitude performance objectives focused toward citizenship responsibilities.
5. Program content based upon performance objectives as recommended by occupational advisory committees.
6. Programs include planned vocational courses with content and instructional time needed to reach performance objectives.
7. Programs include planned vocational courses with expected levels of achievement and procedures for evaluation.
8. Procedures adopted and implemented assuring all persons, including those with impaired vision or hearing, access to information on existence and location of services, activities and facilities accessible to and usable by handicapped persons.
9. Vocational program is competency-based.
10. All vocational course announcements, newspaper advertisements, brochures and other recruitment and promotional materials convey the philosophy of equal access to potential vocational students.

Noncompliance items regarding the occupational advisory committee(s) and its members included:

1. Occupational advisory committee established for each vocational education program or cluster of related programs.
2. Occupational advisory committee meets at least once each year and advises on curriculum, equipment and other related matters.
3. Occupational advisory committee advises on performance objectives.
4. Occupational advisory committee members represent business and industry and are actively engaged in the occupations for which training is provided in the vocational education program.

Summary of Area Vocational-Technical School Findings

A total of 18 items of noncompliance were found in 50 percent or more of the area vocational-technical schools (AVTSs) reviewed. Eleven of these items related to Standards and Regulations, and were most often related to competency-based instruction and its implementation in the classroom.

Seven noncompliance items were found in the OCR review. Three items related to a Section 504 transition plan, two related to Title IX, one was related to physical plant changes, and one item was based on career and course selection materials required to be free of bias and stereotypes.

Vocational program administration items most frequently not complied with include:

1. Vocational program is competency-based.
2. Competency-based plan based on performance objectives. Occupational advisory committee deemed essential to successful employment.
3. Each vocational program includes planned vocational courses with performance objectives specifying conditions, descriptions, and standards for performing tasks.
4. Vocational programs include leadership and attitude performance objectives focused toward citizenship responsibilities.
5. Competency-based program/course planned and managed by teacher.
6. Evidence of safety education in each vocational program.
7. Each secondary vocational education teacher holds valid certification under Chapter 49 for assigned position.
8. Vocational program based on needs assessment.
9. Programs include planned vocational courses with content and instructional time needed to reach performance objectives.
10. Programs include planned vocational courses with expected levels of achievement and procedures for evaluation.
11. Approved vocational programs operating according to hours, grade and sequence shown in approval.

Civil Rights items most frequently not complied with include:

1. Institution adopted and published a grievance procedure providing for prompt and equitable resolution of Title IX student and employee grievances.
2. School conducted Title IX self-evaluation of policies and practices to identify and remedy potential problems of sex discrimination.
3. Development of Section 504 transition plan to provide time frame for structural changes if physical obstacles were revealed in the facility.
4. Development of Section 504 transition plan indicating person responsible for implementation if physical obstacles were revealed in facility.
5. Development of Section 504 transition plan listing handicapped persons or organizations consulted if physical obstacles were revealed in facility.
6. Assurance from district/school/center that additions, modifications or renovations to physical plant made after June 3, 1977, or anticipated, that such changes will not create, maintain or increase student segregation on race, color, national origin, sex or handicap.
7. Criteria developed and disseminated to ensure language and visuals in career and course selection information be free of biases and stereotypes.

Source: *"On-Site Compliance review for Vocational Education* - A Summary of Findings for the 1989-90 School Year", Bureau of Vocational and Adult Education, Pennsylvania Department of Education.

VOCATIONAL PROGRAM HIGHLIGHTS

The Pennsylvania Council on Vocational Education (PACVE) is pleased to present a brief review of vocational education programs in Pennsylvania. Programs described here provide examples of some of the outstanding, quality programs operating in the state's vocational education system.

Collectively, these descriptions provide examples of innovative programs in advanced technology, tech-prep, assistance to "at risk" youths and adults, programs for people with disabilities, cooperative efforts with employers and coordination between secondary and postsecondary programs.

PACVE commends vocational educators, school administrators, teachers, educational support personnel, Job Training Partnership Act personnel and their colleagues in the private and public sector who are providing these services and who are working to meet the needs of youths and adults in their communities, and who are responding to the needs of employers for well-educated and skilled employees.

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Steel Center AVTS

Work Ethics Program

Technical competencies are only a portion of the requirements for employability. Steel Center AVTS developed the Work Ethics Program to strengthen instruction in the conceptual, personal assessment, and interpersonal skill areas. These areas can have significant impact on the future employability of young people.

The Work Ethics Program includes a series of learning activities designed to address the student's moods, feelings, ideas, and experiences. Each lesson consists of a number of possible activities. Each activity has an introduction, a learning experience, in most cases a student handout, and a number of suggestions for follow-up lessons. Activities are designed to raise issues, tap student feelings, and generate class interaction.

The Work Ethics Program, implemented in the 1989-90 school year, is designed for school-wide involvement. Support staff, instructors, and administrators observe and evaluate the students while concepts introduced in the classroom setting are reinforced with follow-up activities. All students, in their junior or senior year, participate in this program with a minimum of 12 instructional hours.

Lebanon County AVTS

Certified Maintenance Mechanic Program

The Lebanon County AVTS has implemented a Certified Maintenance Mechanic Program. This program is designed for plant mechanics or employees who "grew into" the repair jobs around the plant, but have limited background in specific skills and applied training. The program is also designed to upgrade the skills of the utility and production work force.

The certificate program consists of eight 10-week 30-hour course options in the following areas: Applied Mathematics; Basic Handtools; Engineering Drawing and Blueprint Reading; Electricity/Electronics (basic); Commercial Wiring/Industrial Motor Controls; Industrial Machine Trades; Fluid Power; and Air-Conditioning I.

To complete the maintenance mechanic program students must demonstrate an acceptable level of competence by successfully completing each of the listed courses. This program is individualized to the extent that students may "test out" on the mathematics and hand tool portion of the program by passing tests designed for that purpose. Additional advanced credit may be granted with the approval of the Adult Education Supervisor.

The successful participant will receive a certificate of completion for each of the courses taken and another certificate for Certified Maintenance Mechanic for completing the entire program. All coures are offered during the regular continuing adult education schedule.

Butler County AVTS

Student Appreciation Days

The 1990-91 school year began with a new student program to build self-esteem and school spirit. Student Appreciation Days started on the second day of school with each student receiving a three-ring notebook with AVTS graphics and a pencil with the school name on it. On the third day, each student received a complimentary Butler County AVTS T-shirt. On the fourth day, each student received either doughnuts and milk in the morning or pizza and soda in the afternoon.

Throughout the school year, other incentives will be offered to each student including a plastic water bottle with the school name on it for Christmas. The climactic activity will be a drawing for a used car. All students in grades 10, 11 and 12 are eligible. In order to qualify for

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the drawing, everyone with perfect attendance for each month will be entered. In addition, anyone earning a 90 percent or better grade for each class in each marking period will be entered again. The drawing for the car will be held at an annual Senior Awards Program near the end of the school year.

The program encourages community involvement by encouraging organizations to sponsor the incentives, expands the visibility for the school and its programs, and builds self-esteem and school spirit for the students.

Lehigh County Vocational-Technical School

Child Care and Guidance Management Service

The Child Care Services Program at the Lehigh County AVTS is designed to provide graduates with the skills, knowledge, and attitudes necessary for entry-level employment and postsecondary training in child care careers. The program is competency-based, and requires students to demonstrate mastery of specific competencies needed for entry-level employment in the on-site Child Care Center.

The Child Care Program is a two-year course, accepting students in the junior year of high school. Students are required to have a resume, letters of reference, child abuse clearance, and a physical examination. Areas of instruction include: child growth and development, communication, parenting, management, program planning, housekeeping principles, safety, behavior guidance, clerical functions, good health practices, and leadership development.

Graduates possess the skills necessary to secure a position as an aide in a child care center or group

home. The student is able to build upon these entry-level skills through actual work experience and/or continued education to advance to positions with more responsibility.

Community College of Beaver County

Air Traffic Control Specialist Program

Community College of Beaver County Air Traffic Control students will become the first graduates in the Country eligible for direct employment by a Federal Aviation Agency (FAA) control tower without first attending the FAA Academy. Until now, persons hired by the FAA to be Air Traffic Control Specialists have been required to attend a three month course at the FAA Academy in Oklahoma City, regardless of their prior education and training.

Through an agreement signed on August 15, 1990, the FAA authorized Community College of Beaver County to conduct a prototype program for five years to prepare graduates for an Associate in Applied Science Degree in Air Traffic Control. Graduates will be eligible for job placement nationwide through the FAA Eastern Region. It will be part of the FAA Headquarters' "Flight Plan for Training," a comprehensive, multi-year undertaking to enable the agency to accommodate the increased training required by the modernization of the air traffic system.

The Air Traffic Control Program is the only community college aviation curriculum in the United

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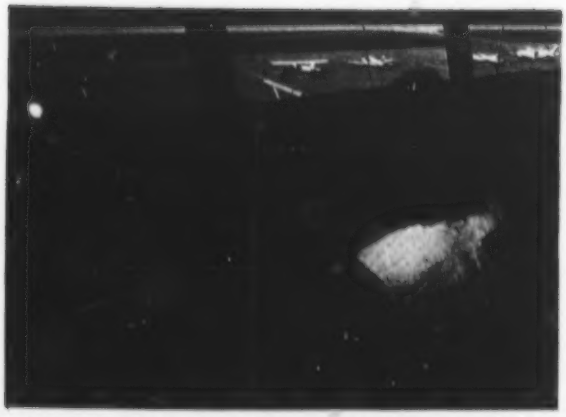

States in which the College maintains an air traffic control facility. The program began in 1976 and the Beaver County Airport Control Tower was incorporated into it in 1977.

Northern Bedford County School District

Community Outreach Targeting Senior Citizens

Northern Bedford County (NBC) School District has been successfully using Community Outreach funds to serve senior citizens for five years. The program is unique to public schools in that a part-time Occupational Home Economics teacher coordinates services to more than 200 senior citizens.

The thrust of the Community Outreach program is to instruct the elderly, primarily in the area of nutrition. The program has expanded to include leisure time interest classes, intergenerational activities, safety and consumer instruction, opportunities for socialization, exercise, and a walking club.

One of the most successful methods for presenting information to senior citizens is through a luncheon meeting, with food served by Occupational Home Economics students in the Northern Bedford County (NBC) High School. The students gain experience in serving meals to the public and enjoy getting to know some of the senior citizens. The program may be presented by students, the Community Outreach coordinator, or a speaker.

Another successful method for involving senior citizens is small group gatherings. The school district provides teachers, audio-visual equipment, and meeting places. Some well-attended leisure-interest classes were Chinese Cooking, Healthy Heart Eating, Refinishing Antiques, Folk Art Painting, CPR and First Aid, Aviation, Houseplants, and Gardening.

Current research emphasizes the benefits of intergenerational contact for all ages. Occupational Home Economics students and senior citizens enjoyed time spent together on field trips to Penn State University,

Stroehman Bakery, and Lincoln Caverns.

Community Outreach has given senior citizens the opportunity to become involved with the Northern Bedford County school family and activities. They have found that involvement to be both mind stretching and enjoyable.

SUN Area Technical School

Partnership Programs That Work

Reemployment training under the federal Trade Adjustment Assistance (TAA) Program is one of the many services SUN Area Technical School (ATS) provides to displaced workers to enable them to develop skills required in today's technological society.

In the 1989-90 school year, 20 adult students completed training programs in the TAA Project. The program helps workers, who lost their jobs as the result of trade imports, reenter the labor market with new and marketable skills.

Most of these students were previously employed by the now closed Bethlehem Wire Rope plant in Williamsport and the GTE plant in Montoursville. The students were trained in such areas as plumbing, heating and refrigeration, welding, electrical occupations, auto technology, machine tool and other skills.

The full tuition of the training is provided to these displaced workers under the federally funded TAA program.

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Occupational Competency Testing Program

One of the region's largest employers, American Home Foods Incorporated, hires many SUN ATS graduates and has taken full advantage of the school's occupational competency testing program.

The SUN ATS staff has designed and administered ten different competency tests to numerous employees of the company. The program provides an unbiased evaluation of employees requesting advancement in the Maintenance/Engineering Department.

The adult education coordinator at SUN ATS has worked with the company and SUN ATS instructors to conduct competency testing in: A and B Mechanic, Electrician and Plumber levels; Class A Building Repairs (involving masonry); Class A Machinist; and Class A and B Maintenance (the former involving mechanical, electrical, plumbing and welding skills).

"Wheels of Learning"

Cooperation with industry is a priority at SUN ATS in many areas and programs. One of these is known as "Wheels of Learning," a four-year, Pennsylvania state-approved carpentry apprenticeship course.

The new adult program, started in the 1989-90 school year, has 15 enrollees. The course is taught in cooperation with the Associated Builders and Contractors (ABC) organization. Costs of the program are paid by the organization's membership, which also provides curriculum materials to all students and instructors. The instructors are provided by SUN ATS.

The four-year program involves two nights of instruction per week throughout the entire year, and leads to a journey carpenter status.

Automotive Dealer Mechanic and Auto Body Repair Training

SUN ATS provides facilities for Automotive Dealer Mechanic and Auto Body Repair Training. Factory technicians from companies such as Chrysler and Ford provide hands-on training for area mechanics, SUN ATS students and instructors. The companies provide new vehicles, parts and instructional materials to the school as part of a reciprocal agreement.

More than 500 area mechanics have attended classes since 1986. The school has received 11 vehicles and associated parts for instructional purposes as well as instructional manuals and other materials. In all cases vehicles and parts are brought directly into the instructional room for hands-on training.

One of these programs, an evening seminar for 60 representatives of local auto body shops from more than six counties, addressed the subject of sheet-molded composite repair used to manufacture the General Motors mini-vans.

With many vehicle manufacturers turning to new sheet-molded materials for safety, easier collision repair, better insurance rates and other factors, the program was arranged as a joint venture of SUN ATS and the Shoemaker Auto Supply Company of Bloomsburg. The seminar instructor was a representative of a training center located in Allentown.

Without this program auto dealerships would have to send mechanics and repair technicians to distant points for training.

Carlisle Area School District

Leadership Carlisle

During the 1989-90 school year, the Carlisle Area Chamber of Commerce initiated a program entitled "Leadership Carlisle." The program was designed to provide leadership training for business leaders interested in working with community-based nonprofit organizations.

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Participants in the program were asked to choose a project needed by the community. Three individuals representing IBM, the U.S. Army War College, and the Carlisle Area School District, chose a career orientation program which would allow seventh grade students to gain a perspective of the world of work early in their educational experience.

The pilot program began in the fall of 1990. Speakers from six occupational clusters — tourism, health fields, corrections, construction, manufacturing, and computers — made presentations to large groups of volunteer seventh graders at two middle school buildings in the Carlisle system. This presentation consisted of giving students general information about six cluster areas which the speakers represent, then moving into more occupations and opportunities existing within each cluster.

Students completed an application to request a tour of job sites from one occupational area. Applicants were screened to determine which 10 students would visit the workplace. Students participated in the tour and also had an opportunity to sit down and talk to-employers, personnel managers, and other human resource people, in the position of hiring individuals in these occupations. These interviews highlighted for the students:

1) the importance of a high school diploma;
2) the relationship between work and school environments;
3) how to succeed in the job environment;
4) special skills that can be obtained in high school.

In cooperation with the Chamber of Commerce the program accomplished several objectives including:

1) provided guidance and orientation on educational and career opportunities to young students;
2) increased student understanding of the relevance of their studies to their economic future;
3) addressed work ethics and career expectations;
4) influenced educational decisions before students made an uninformed choice.

Organizations and businesses which participated in the pilot year of this program included Holiday Inn, the U.S. Army War College, the Carlisle Borough Police, John Gleim Excavating, Carlisle SynTec Systems, the Code Enforcement Office, IBM, EDS, and Masland Industries.

Lancaster County AVTS-Willow Street

Nontraditional Summer Day Camp Program

In June, 1990, 22 girls from the eighth and ninth grades at Hand and Reynolds Junior High Schools in Lancaster attended a two-week summer day camp program to explore nontraditional careers. The camp was conducted at Willow Street Vo-Tech School for four hours each day.

The participants gained experience in light metal fabrication and millwork and cabinetry skills. Three hours each day were used for metal or woodworking skill development, and one hour on communications skills such as problem solving, decision making, self-esteem issues, assertiveness, and personal development. Students also had opportunities to talk with successful women in nontraditional careers.

Delaware County Community College

Apprenticeship Training

The growth of high tech and service industries in the Greater Philadelphia area has increased the need for facilities, homes and trades people to support the increased population. Because of the demands of construction and manufacturing organizations, Delaware County Community College (DCCC) has renewed its commitment to training apprentices.

DCCC has developed partnerships with a wide range of organizations to provide classroom training for apprentices. The type of organization, size of the apprentice group, duration of the apprenticeship and location of training varies, but the training model is consistent. Labor unions, management groups, and corporations make up the sponsoring organizations which join with the College to provide training in Plumbing, Bricklaying, Cement Finishing, Electrical, and Machinist trades. All the organizations have an apprenticeship committee which selects the apprentices and acts as the governing body for the organization. Apprenticeship classroom sites are selected for the convenience of the apprentice. Many companies provide space in their own building and DCCC instructors go to their site. Classroom instruction is also incorporated into the regular college semester night programs conducted at various DCCC locations.

All curricula have a set of core programs including math and blueprint reading. Each apprenticeship is then customized through the development of a curriculum by the specific apprentice committee and the College. When the course involves specific technical information, the College hires technical instructors at the recommendation of the particular apprentice committee and then trains those persons in proper teaching techniques. The length of the programs depends on the trade, ranging from two to five years.

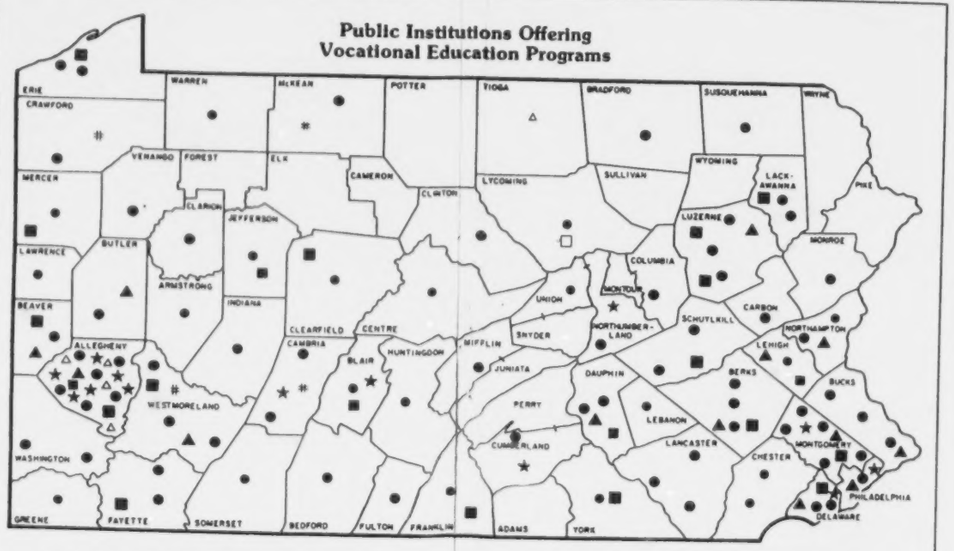
Technical Studies A Work to College Program

The Technical Studies Program, offering an Associate Degree, is designed to give recognition for work and life experiences to students pursuing a wide range of career studies. It will assist individuals in preparing for employment in a chosen field, in advancing within their present occupation, or in developing skills for personal, professional and community goals.

The program emphasizes personalized education. The three major components are a Technical Core, General Education and the student's Personalized Education Plan (PEP). The program requires the student to earn 60 credit hours.

The Technical Core of the program awards as many as 20 credit hours for life and work experience such as apprenticeship training, military training, or trade/proprietary education. The General Education portion of the program requires the student to select 20 credit hours of course material in communications, mathe-

Public Institutions Offering Vocational Education Programs



87 • Area Vocational-Technical Schools (includes 2 adult AVTSs)
13 ▲ Community Colleges
18 ■ Penn State Branch Campuses
5 △ Branch Campuses of Community Colleges
4 # University of Pittsburgh Branch Campuses
13 ★ Comprehensive High Schools Offering Five or More T&I/Technical Programs.
□ Pennsylvania College of Technology

Note: There are several AVTS sites in Philadelphia. There are also several comprehensive high schools in Philadelphia and Pittsburgh that offer full vocational programs.

Source: Bureau of Vocational and Adult Education, Pennsylvania Department of Education.

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matics, natural science, social science and humanities.

The student's PEP allows the individual to specify a goal or objective and to choose course work offered by the college which will allow them to reach that objective. Emphasis can be placed in a number of technical/industrial programs, computer programs, and entrepreneurship/management offerings.

Modern Office Skills

Developed in 1987 as an off-campus program for women in transition, the DCCC course for Modern Office Skills is a condensed program designed for short-term, intensive training. Participants include high school students with insufficient office skills, personnel needing updated office skills, career changers and displaced homemakers. The course is offered at the Collingdale Campus.

From September, 1987 to September, 1989, 73 students have been enrolled. Fifty-three of these students (73%) completed the six course program and received a Certificate of Competency. One third of the graduates continue their education on a part-time basis and some graduates continue as full-time students. All credits earned will transfer to the DCCC Associate Degree Program in Office Administration.

Instruction includes an orientation to electronic office procedures and the impact of technology on office procedures, work load and job responsibilities. Each semester a local job placement agency sponsors a scholarship for an outstanding student.

Harrisburg Area Community College

Transitions Program

The Harrisburg Area Community College (HACC) Transitions Program is a job training program funded by the Commonwealth of Pennsylvania Joint Jobs Initiative. Dauphin County residents who receive cash assistance for 90 days receive vocational training. The program has three components: vocational training, job literacy classes and employability skill workshops. Students are offered choices of vocational training in Introduction to Professional Cooking Techniques, General Office Work, Auto Mechanics, Building Maintenance and Small Engines Repair. Job literacy classes help the students use the training materials in the vocational training component of the program. Students also have the opportunity to prepare and review for the General Education Diploma (GED).

Intensive counseling, either on an individual or group basis, is provided to the students in efforts to help remove barriers between the student and a meaningful job with opportunities for growth. Participants may take six months to complete the program and enter the job market. Graduates are referred to job openings according to the number of competencies achieved during the vocational training. During the 1989-90 program year, 91 students were enrolled in the program. A 75% retention rate was achieved at the end of the program year. .

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This program is an example of occupational preparation through a joint partnership between a local agency (Dauphin County Assistance Office), a community college (HACC), and state agencies (Departments of Public Welfare, Labor and Industry, and Education).

Cabinetry

South central Pennsylvania has many millwork employers who need talented craftspersons. Students graduating from Harrisburg Area Community College's (HACC) new Cabinetry program have acquired the skills needed to secure jobs in a variety of cabinetry/millwork professions, ranging from the smallest shops to major manufacturers. Mill Creek Cabinetry, a custom cabinetry and fine furniture manufacturer in Elizabethtown, worked with HACC to develop a 20 credit diploma program in Cabinetry tailored for the regional market.

The owner and operator of the plant is the principal program advisor and instructor and the plant is the instruction site. Students receive lectures and demonstrations, as well as hands-on experiences. Field trips enhance the program and expose students to various aspects of the trade. Students have the opportunity to gain skills and knowledge needed to produce cabinetry and furnishings of the highest quality and exhibit attention to detail often overlooked in the mass-production process.

Western Montgomery County Area Vocational-Technical School

Child Care and Development

The Child Care and Development program provides students with preparation for employment in the field of child care as aides in family, center, school or camp programs.

The competency-based program has been designed to include both theory and practical experience. The development of the child from birth to age five is studied in context of how he/she can best learn at each stage of development. Practical experience is acquired through operating Panda Preschool, an on-site nursery school, as well as fulfilling clinical requirements by working in a local child care facility.

The program, which includes the Child Development Associate (CDA) credential competency standards, is designed to meet career aspirations at any level. All students are prepared for entry-level employment in the child care field. Competencies can also be applied

to the CDA credential or a child-oriented college degree.

Academic skills are integrated into the program. Students are exposed to expertise in the field of early childhood education through current periodicals and literature. Reading and study skills are practiced. Critical thinking skills are developed through observations and evaluations of preschool education and teaching techniques. Each student compiles a portfolio of writing assignments and creative applications related to each competency.

Eastern Montgomery County Area Vocational-Technical School

Consortium Helps Students Earn College Credit

A new agreement between the five Montgomery County vocational-technical schools and Montgomery County Community College was signed in March, 1990. This pioneering effort produced the Montgomery County Consortium for Vocational and Technical Education — the first organization of its kind in the Commonwealth.

The plan enables high school students to earn college credits for work at the vocational-technical school and then apply those credits to an associate technical studies degree at Montgomery County Community College. The new agreement will generate more interest in the community college and make the transition from secondary to college programs more efficient. Facilities and programs will be shared, but not duplicated. The program also allows adult and college students to enroll in occupational programming at the Technical School. The new program began during the 1990-91 school year with the automotive technician training degree program at Eastern Montgomery Vo-Tech.

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The Consortium is an informal collaboration of the chief executive officers of the following educational institutions:

Western Montgomery AVTS
Northern Montgomery AVTS
Central Montgomery AVTS
Eastern Montgomery AVTS
Pottstown High School
Montgomery County Community College

The primary objective of the Consortium is to make available to all Montgomery County students, beginning in grade 11 and including adults, appropriate vocational/technical programs. It is intended to be the single organization within Montgomery County responsible for coordinating all vocational/technical education services beyond the secondary level including adult education, dual enrollment/dual credit and Tech Prep programs.

The current focus of the Consortium is on articulated and coordinated programs. The intent of these programs is to enable students to progress through the system faster, saving time, money and effort, and to encourage career-oriented students to continue their education at the community college.

Other goals of the Consortium are to attract a greater number of students to technically-oriented programs, improve the utilization of existing buildings and develop new or revised technologies to meet the needs of the employers in Montgomery County.

Montgomery County Community College

Automotive Technician Training

This two-year course, which grants successful students an A.A.S. (Associate in Applied Science) degree upon completion, is the only one in the Greater Philadelphia area which teaches students the principles of all automotive makes/models, as compared to other programs serving individual manufacturers. The program provides the student with a complete understanding of the automotive industry and secures graduates employment as a professional automotive service technician.

Offered in cooperation with the Automobile Dealers Association of Greater Philadelphia (ADA), this program is designed for students to maintain paid "apprenticeships" at area dealerships while they are attending school. The program runs for five semesters, each consisting of eight weeks of full-time classes, alternating with eight paid work weeks at an assigned sponsoring dealership. The rotation system continues until the program is completed.

Applicants must be high school graduates (or equivalent) and must meet the admission requirements of Montgomery County Community College and the ADA of Greater Philadelphia. Students must obtain sponsorship by a participating ADA dealer. This can be achieved by a referral to a potential dealer-sponsor through the College, through a dealership willing to sponsor a student, or direct recommendation by the ADA.

Berks Vocational-Technical School

Pennsylvania Energy and Environmental Concept House

During the 1990-91 and 1991-92 school years, Berks County AVTS will participate in a joint venture with the Pennsylvania Energy Office, Metropolitan Edison Company, and Advanced Building Technology, Incorporated, to build a model energy efficient home. The Pennsylvania Energy and Environmental Concept House (PEECH) will demonstrate the best in residential energy efficient design and environmentally sound construction. It will focus on the substantive issues of design, engineering, systems integration, materials, and quality of construction in making a home safe and affordable for its occupants.

The house will be located on the AVTS campus and will serve as an innovative laboratory for vocational students and teachers, featuring automated modular technology. Cut-away view ports for structural and mechanical components will assist the construction cluster in identifying new technology for students, realtors, builders, building code officials, and the general public, all of whom will have access to the model.

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The house will become the property of Berks County AVTS, with operating expenses for the two-year period paid by a grant from the Energy Office. The Energy Office will coordinate the overall project. Met-Ed and Advanced Building Technology (and their suppliers) will donate equipment, appliances, materials and expertise.

Students will learn site layout, foundation preparation, final utility hookups, house interior completion, and exterior finishing. Students will have access to the modular home technology which will be integrated with current energy efficient and environmentally sound construction techniques.

Berks Vocational-Technical School + East Penn Manufacturing Company, Inc. = Success

East Penn Manufacturing Company, Incorporated, recently made a multi-million dollar investment in new electronic equipment for the manufacture of automotive and industrial batteries. Recognizing that hardware is useless without trained personnel to program and maintain the equipment, East Penn needed to develop a plan for the ongoing training of all employees. Production workers needed to develop new operational skills, and those employees involved in maintenance, set-up and supervision needed the opportunity to master the equipment.

Using federal vocational education funds, the Vo-Tech established an Electro-Mechanical program to train adults. East Penn's training manager worked with the school to determine how this program could assist with the company's plan to train employees on Programmable Logic Control (PLC) equipment. It was determined that the Vo-Tech could provide the needed PLC instruction, as well as make application for Customized Job Training (CJT) funds. The CJT program allows East Penn Manufacturing to tailor an in-house training program that complements the Vo-Tech instruction.

Berks County: Vocational Education-JTPA Partnership

The Berks County Employment and Training Office, service provider for Job Training Partnership Act (JTPA) programs, and Berks Vocational-Technical School have provided training to dislocated workers and public assistance recipients.

Representatives from the county employment and training office consulted with the school and identified two programs which offered potential local placement success. Heating, Ventilation and Air Conditioning (HVAC) and Microcomputer Specialization programs were started almost immediately for JTPA clients. Due to the flexibility of Vo-Tech scheduling, the three-month programs began as an evening class during the school year, then continued as a day school program in the summer.

The Vo-Tech' s placement rate has always exceeded performance standards established by federal guidelines for the Berks County service delivery area. In this case, some students found new employment even before their training was complete. Others have the benefit of job placement activities until 90 to 120 days after their course is completed.

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Walter Biddle Saul High School of Agriculture Science

Adopt-A-School Program

As part of Philadelphia's Adopt-A-School program Penn State University officially adopted Saul High School in October 1989. Since then, students from Saul and Penn State's College of Agriculture have participated in an exchange of student visits and other educational opportunities. Under the adoption agreement, Penn State will be working closely with Saul students to help them identify career and educational opportunities in agriculture.

Saul, a magnet school for the agricultural sciences, attracts students interested in agriculture. Students must pass entrance examinations and demonstrate ability in agriculture and science to attend Saul, the largest specialized agricultural high school in the United States. In addition to English, math and science, Saul students study embryology, agronomy, and horticulture.

Students from Saul have visited the Penn State campus. They met university faculty and staff, toured the College of Agriculture facilities, and participated in hands-on educational activities associated with careers in agriculture, such as forestry and wildlife ecology, agricultural engineering, and agricultural economics and business management. Saul students have also received college credit for Penn State courses taught at Saul.

Forbes Road East AVTS

Equity-Apprenticeship Link

The equity staff at Forbes Road East Area Technical School has implemented a pilot project. The School to Apprenticeship Link Program (SAL) provides students, particularly females, with opportunities to experience quality apprenticeship programs in construction trades as well as more than 800 other career areas. The equity staff coordinates the project with the Department of Labor's Bureau of Apprenticeship Training (BAT) and the Apprenticeship Information Committee of Western Pennsylvania (AIC).

Apprenticeship training program information is presented to students at Forbes East AVTS and in nine participating school districts. Apprenticeship is an alternative to college, requiring approximately the same amount of time yet providing an income while career advancement is achieved. Students learn that this formal training for women and men provides occupational skills through on-the-job experience and classroom instruction.

Role models and union/apprenticeship representatives share their views and knowledge. Individuals who show interest receive direction and subsequent notification of when and where apprenticeship applications are accepted. Equity funding provides an intensified program to prepare adult females for apprenticeship employment through such courses as Nontraditional Awareness, Improved Math/Technical Skills and Career Exploration.

Community College of Allegheny County, North Campus

Homemaking Skills for Adults with Mental Retardation

This program was designed to improve the effectiveness of consumer and homemaking education for adults with mental retardation residing in Community Residential Programs in Allegheny County. It provides students with relevant skills in basic homemaking through demonstrations, hands-on participation, audiovisual aids, group discussion and special projects.

Certified Home Economists instruct students in the residences where they live. In 1989-90, the Homemaking Skills Grant provided instruction for 149 clients in 31 teaching sites. Most clients received 80 hours of instruction. The program is funded by the Pennsylvania Department of Education.

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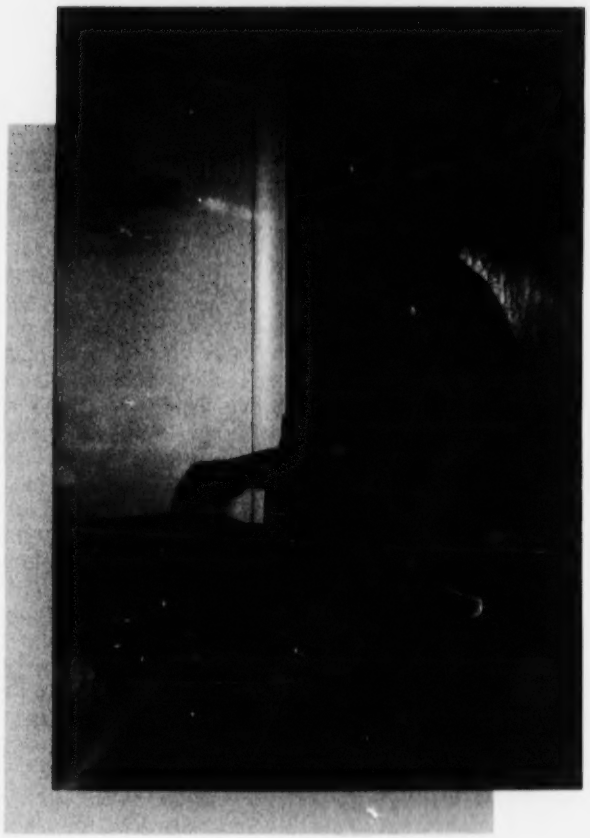


Interpreter Training Program

Recent federal regulations requiring full accessibility and communication for deaf individuals indicate qualified interpreters will be in demand in the near future. The Community College of Allegheny County's Interpreter Training Program (ITP) trains people to perform this vital role.

The program emphasizes instruction in American Sign Language (ASL), an in-depth study of Deaf Culture and interpretation between ASL and English. The 64 credits required to earn an Associate of Science Degree include classroom instruction, lab courses, and an off-campus, supervised practicum during the final semester. During this field work interns gain practical work experience to complement their classroom instruction.

After completing the ITP, many graduates pursue national certification. While the majority of full-time employment opportunities exist in educational settings, full-time and part-time jobs are available in medical, vocational, mental health, legal, financial, and recreational settings.

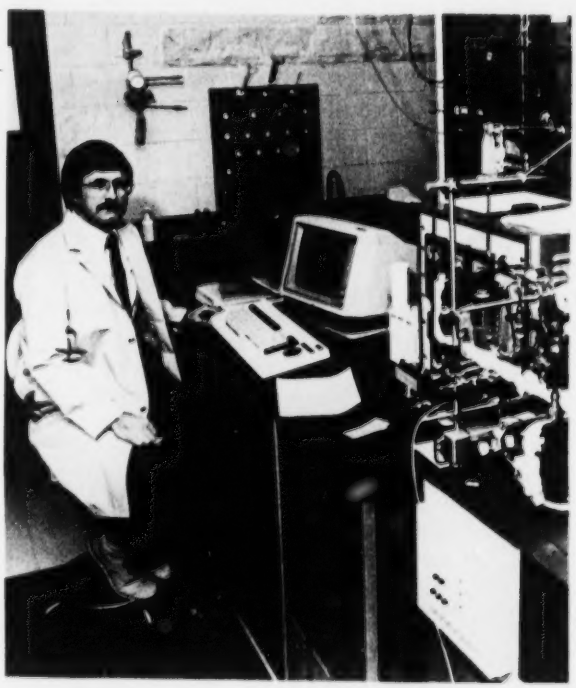
Community College of Allegheny County, South Campus

Fossil Energy Program for Technicians

The Fossil Energy Technician Program was developed as a result of the success of noncredit instruction for chemical technicians. In April, 1986, the United States Department of Energy/Pittsburgh Energy Technology Center (PETC) asked the Community College of Allegheny County, South Campus, to develop a course to upgrade the skills of chemical technicians. The course was so successful a series of additional courses was offered. This led to a request from PETC for a community college certificate program for chemical technicians.

A customized program was developed. The 22-credit Fossil Energy Technician Program offers one course per semester for six semesters. Upon successful completion of this program, the technicians receive a Fossil Energy Technician Certificate and are eligible to continue their education including attainment of an associate degree in this technological area.

One unique and innovative aspect of this program is the development of the 4 credit course, Energy Science and Technology. South Campus received a grant from the U.S. Department of Energy/PETC to design the course. It addresses the present and future energy demands of our nation and world. It specifically emphasizes the coal fuel cycle and its impact on energy needs and the environment.



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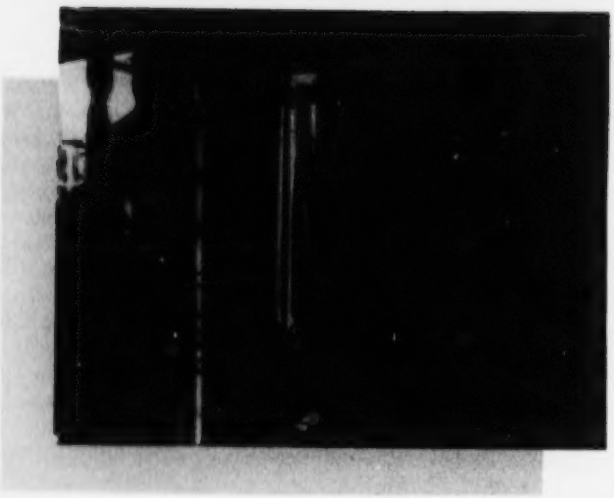

Pittsburgh Public Schools

Perry Field House Project

The Perry Field House was a unique project that provided multidisciplinary learning experiences for 21 vocational students from the Pittsburgh Public Schools.

Students received on-the-job training in the specific area of their chosen vocational program by building this facility. These areas included carpentry, electrical wiring, masonry, plumbing and heating/ventilation/air conditioning and welding. The materials, processes and skills studied in their respective school-based vocational program were merged into a functional, community-based project.

The concrete block building is located on Perry Traditional Academy's football field. It was used as a vocational-technical classroom for about 18 months during renovations at Perry. It is now used as a concession stand and storage area for the Athletic Department. The Field House was a cooperative effort between the City of Pittsburgh and the Pittsburgh Public Schools Division of Career, Occupational, Vocational and Technical Education.

The Perry Field House was a work experience as well as an experience in community service and pride. The work environment helped to direct each student-worker to develop the attributes of a productive and responsible employee under the careful direction of the teacher-crew leader.

"S.V.T. Enterprises"

"S.V.T. Enterprises" is a competency-based entrepreneurship program at South Vo-Tech High School. Students may enter the program from ninth through twelfth grade.

Approximately 100 students are enrolled in the four-year program and are given the opportunity to "operate a business". Ninth and tenth grade students develop basic business skills through the daily operation of two school stores. Eleventh and twelfth grade students manage the "S.V.T. Enterprises" school company at the South Vo-Tech Stadium Concession Stand for high school football games, Special Olympics, post-secondary and community activities. Most of the students are "at risk" as middle school underachievers and secondary students who are having difficulty with their current vocational programs.

The curriculum was developed with marketing as its core. Theory is provided in merchandising, store operations, advertising, display and sales techniques, and then applied in work situations. In addition to basic arithmetic and oral and written communication skills, major emphasis is placed on the development of good human relations and essential life skills, such as common courtesy, etiquette, personal appearance, appropriate business dress, decision making and self-confidence.

Most students enter the program with few skills. Student needs are assessed on a regular basis. "S.V.T. Enterprises" provides the opportunity for students to develop entrepreneur responsibilities. Students are promoted according to their on-the-job performance.

The skills for "getting and keeping" a job are examined and developed as an integrated portion of the curriculum. Students must know how to fill out application forms, write resumes and interview successfully for a job. These skills are required for school store positions as well as for future employment.

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The Entrepreneurship Program was implemented in 1987. There have been no dropouts. During the past two years, two graduates have successfully started their own businesses. Others have remained in their co-op positions. Each year a growing percentage of students choose to further their education in post-secondary schools by studying marketing and business management.

Lancaster County AVTSs

Ford ASSET Automotive Technology Program

Ford Motor Company's Automotive Student Service Educational Training (ASSET) Program, is a two-year Associate Degree Program in Automotive Technology. The program is operated by Ford-designated educational institutions throughout the United States.

Housed at the Brownstown Vo-Tech School, the program provides classroom instruction and paid work experience to individuals desiring to be automotive technicians. The program is a cooperative effort of the vocational education system, Reading Area Community College (RACC), Ford Motor Company and Ford and Lincoln Mercury dealers. Curriculum and instruction are controlled by the area vocational-technical school and RACC. Equipment and other instructional media are provided by the Ford Motor Company.

The joint venture was created to assure that an adequate supply of properly educated technicians is available for employment, to expand educational opportunities for students in technical fields, and to optimally utilize educational facilities to address community needs.

Joint Venture in Construction Programs

Lancaster County Vocational-Technical Schools, in conjunction with the Keystone Chapter of Associated Builders and Contractor's (ABC), Incorporated, will provide an apprenticeship opportunity for vocational students enrolled in various construction programs at Brownstown, Willow Street, and Mt. Joy schools.

The venture will address vocational programs in construction technology, carpentry, electricity, plumbing, and light metal fabrication. The ABC Apprenticeship programs include carpentry, electricity, plumbing, and sheet metal. Competencies acquired in the vocational programs parallel many of those taught in the first and second year theory portion of the ABC Apprenticeship Program. Similar skills will be identified and students will receive advanced apprenticeship placement based upon successful early completion of those skills.

Students in one of the identified vocational programs are required to complete the apprenticeship application, with the option to test out of specific levels of the apprenticeship curriculum. This method could be used to satisfy as much as two years of program theory requirements. However, these students will still be required to complete all phases of on-the-job (OJT) training.

College Credit Program

Lancaster County AVTS provides the opportunity for high school students to earn college credit in technical areas from several area postsecondary institutions, including Reading and Harrisburg Area Community Colleges, Penn College of Technology, and Thaddeus Stevens State School of Technology.

Admission to the college will require applicants to submit personal background data. Preregistration testing is required of students for use as a counseling aid. Students will be advised to enroll in freshman courses, pursue developmental course work, or consider noncredit academic preparation before enrolling in credit courses. Some programs will require licensure or certification upon program completion.

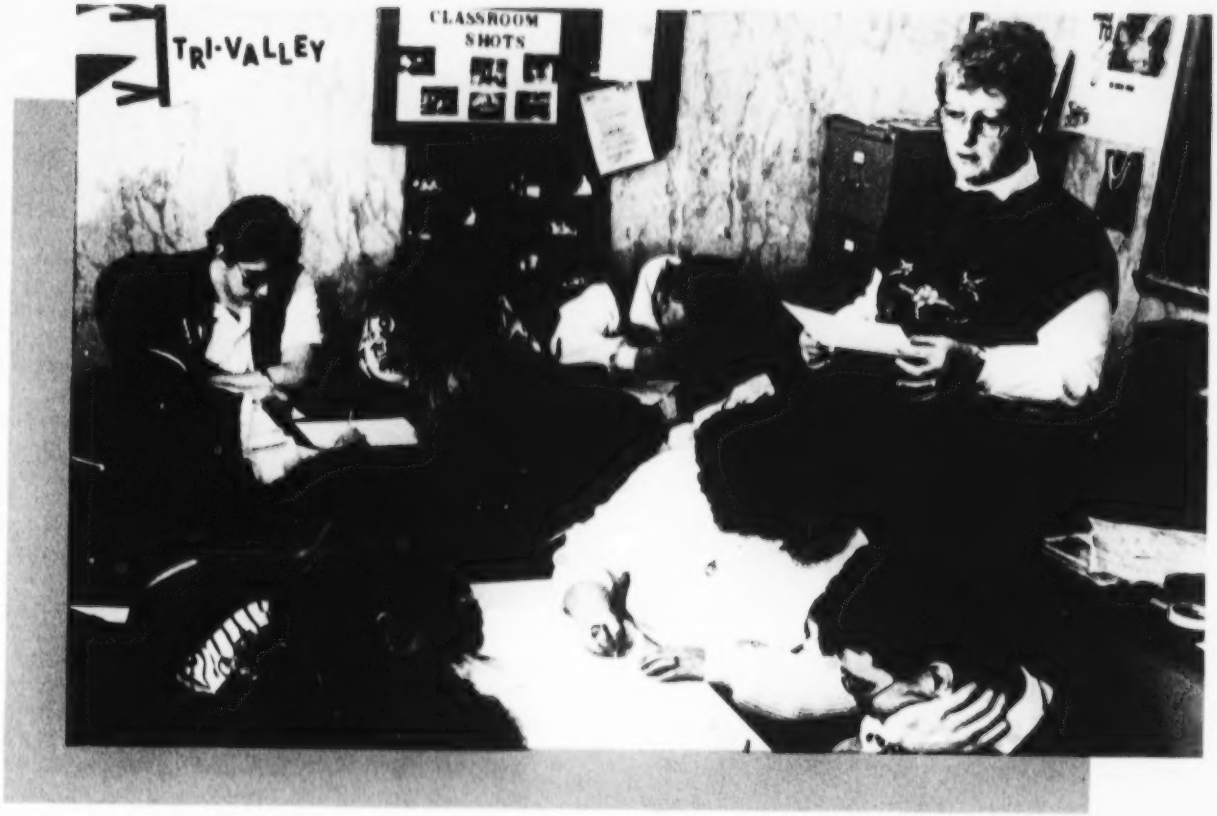
Schuylkill County Area Vocational Technical School

Classroom-In-The-Mall

The Classroom-In-The-Mall is held at the Schuylkill Mall, Frackville. Crown American Corporation has donated classroom space to the Schuylkill County Area Vocational-Technical School (SCAVTS) to conduct the Marketing and Distributive Education Program. The Classroom-In-The-Mall program has established a partnership in education with Crown America Corporation and the Schuylkill Mall Merchant's Association.

Through the utilization of competency-based curriculum materials students will acquire entrepreneurship skills and techniques in a realistic business setting. A viable classroom-in-the-mall curriculum will be developed for Schuylkill County.

After receiving daily math instruction at the North Schuylkill AVTS, students are bussed to the Schuylkill Mall to attend class from 10:00 a.m. to 2:00 p.m. Various theory classes are offered and mall activities



provide hands-on experiences. Many managers serve as resource people for the class. Cne day a week each student works in a mall store as an intern to gain experience as a salesperson. Students rotate from store to store on a weekly basis.

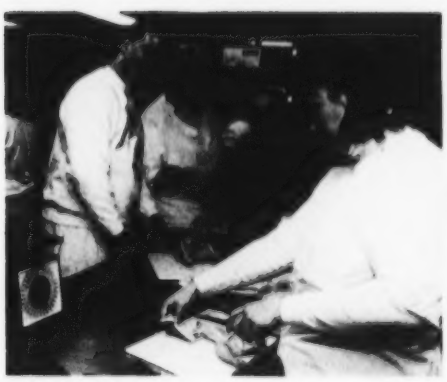
The physical placement of the Marketing and Distributive Education Program in the mall setting has virtually eliminated problems with co-op placement. Many of the first year students have been hired for part-time jobs and all students have developed job references through the intern program. The experience available to the students in this mall of 100 stores is unlimited.

The Schuylkill County Area Vocational-Technical Schools were awarded Exemplary status by the Pennsylvania Department of Education for the Marketing and Distributive Education "Classroom-In-The-Mall". The program received a grant to duplicate course materials for dissemination to schools interested in starting or improving their marketing programs.

A STATISTICAL REVIEW OF VOCATIONAL EDUCATION IN PENNSYLVANIA

The following pages present a statistical summary of the status of vocational education in Pennsylvania. The tables and figures include data on vocational student enrollments, special populations, placement of completers, and earnings of employed graduates. Information is also presented on the Customized Job Training (CJT) program and the Governor's Special Grant for Education (8% Funds) of the Job Training Partnership Act (JTPA).

Total Students Enrolled in Vocational Education Programs		248,590
Includes:	Secondary	131,258
	Postsecondary	56,800
	Adult	60,532
Secondary Vocational Education Special Needs Students		
	Handicapped	14,678
	Disadvantaged	41,209
	Teachers of Approved Vocational Education Secondary Programs	5,122
	Federal Funds for Vocational Ed.	$40,473,000
	State/Local Funds for Vocational Education	$448,843,000
	Area Vocational-Technical Schools (AVTS)	87



Vocational Program Offerings

In Pennsylvania, vocational education classes are offered in secondary, postsecondary and adult programs. The following table identifies the number of programs offered at the various types of institutions.

TABLE 1

Public Vocational Education Institutions and Programs in Pennsylvania

1986-87 to 1988-89

	Number of Institutions Providing Vocational Education			Number of Programs Offered		
Type of Institution by Level	**1986-87**	**1987-88**	**1988-89**	**1986-87**	**1987-88**	**1988-89**
TOTAL	800*	774*		7,497	6,759	
Secondary Total	692	667	611	4,226**	3,978**	3,736**
AVTS	85	85	85	1,610	1,567	1,612
High School	586	562	522	1,610	2,354	2,116
Intermediate Unit	14	13	4	26	25	8
Correctional Institution	7	7	7	34	32	32
Postsecondary Total* **	91	92	***	1,333	979	***
State University		9			19	
State-Related Commonwealth University	18	24		188	163	
Community College	14	14		772	555	
Private State-Aided Institution		5			19	
Private College and University		31			128	
Private Junior College		9			95	
Other Institutions	59			373		
Adult Total	221	214	200	1,898	1,802	1,531
AVTS	71	73	67	1,306	1,261	1,051
High School	133	124	118	487	439	380
Correctional Institution	10	11	14	74	77	98
Intermediate Unit	7	6	1	31	25	2

*Unduplicated.
**Includes 110 programs not approved under state regulations and standards for vocational education.
***Data not collected every year.
Source: VEMIS, Enrollments and Completers in Approved Secondary Programs, 1989-90.

Decline of Secondary Student Enrollments Continues

The 1988-89 school year marked the fifth year in a row that vocational education enrollments as a percentage of the total public secondary school enrollment (grades 10-12) declined. From a high of 47.1 percent in 1982-83, the proportion of all students enrolled in vocational education programs, including Consumer and Homemaking Education, dropped to 33.6 percent in 1988-89.

TABLE 2

Percent of Pennsylvania High School Students Enrolled in Vocational Education

1979-89

	All Students Grades 10-12	Occupational Vocational Education Enrollments* Grades 10-12		Total Vocational Education Enrollments** Grades 10-12	
Year	N	N	% of Total	N	% of Total
1979-80	493,067	178,646	36.2	229,726	46.6
1980-81	478,719	175,120	36.6	224,812	47.0
1981-82	459,552	167,614	36.5	216,607	47.1
1982-83	438,066	163,645	37.4	206,261	47.1
1983-84	424,201	152,533	36.0	191,698	45.2
1984-85	412,467	139,489	33.8	173,707	42.1
1985-86	411,976	126,575	30.7	162,063	39.3
1986-87	407,064	113,876	28.0	149,266	36.7
1987-88	396,138	103,266	26.1	132,987	33.6
1988-89	373,043	86,726	23.2	111,100	29.8

Note: Vocational education enrollments include approved programs only.
*Does not include Consumer and Homemaking Education or Industrial Arts Education.
**Includes Consumer and Homemaking Education and Industrial Arts Education.
Source: Bureau of Information Systems, Pennsylvania Department of Education.

Enrollments Continue to Decline

All occupational areas of secondary vocational education experienced a decline in enrollment in 1988-89. The overall decline for all occupational programs was 13 percent, an increase of 3 percent over 1987-88.

Almost half (47%) of the 19,849 student decline was in Business Education. Consumer and Homemaking Education had the second largest decline of 25% of the total students enrolled.

Percentages shown in the chart below reflect the percentage of student decline within each program from 1987-88 to 1988-89.

TABLE 3

Secondary Vocational Education Enrollments in Pennsylvania

1981-89

Program	1981	1983	1985	1987	1988	1989	% Change 1988-89
Agriculture Education	13,825	12,728	11,122	9,443	8,445	6,918	-18%
Marketing & Distributive Ed.	9,694	8,856	7,071	5,809	5,202	4,564	-12%
Health Occupations	5,151	4,866	5,081	4,210	3,593	3,262	- 9%
Occupational Home Economics	7,637	10,032*	9,002	7,502	6,613	6,185	- 6%
Business Education	61,110	61,146	50,322	39,966	35,640	26,276	-26%
Technical Education	9,708	8,827	7,766	—	—	—	—
Trade and Industrial Ed.	76,708	59,859*	51,803	50,822*	48,330	45,604	- 6%
Not Elsewhere Classified	4,986	12,200	10,983	5,476	5,245	5,519	+ 5%
SUBTOTAL	188,829	178,514	153,993	123,228	113,068	98,328	-13%
Consumer and Homemaking Ed.	63,020	54,728	44,846	45,306	37,439	32,390	-13%
Industrial Arts Education	—	—	—	—	600	540	-10%
SUBTOTAL	63,020	54,728	44,846	45,307	38,039	32,930	-13%
GRAND TOTAL	251,849	233,242	197,996	168,535	151,107	131,258	-13%

*Changes due in part to alterations in student accounting methods.

Note: Technical Education enrollments have been combined with Trade and Industrial Education enrollments since 1987-88. The Pennsylvania Department of Education began approving programs in Industrial Arts Education in 1987-88.

Source: Vocational Education Secondary Program Statistics, 1988-89, Table 2. Bureau of Information Systems, Pennsylvania Department of Education.

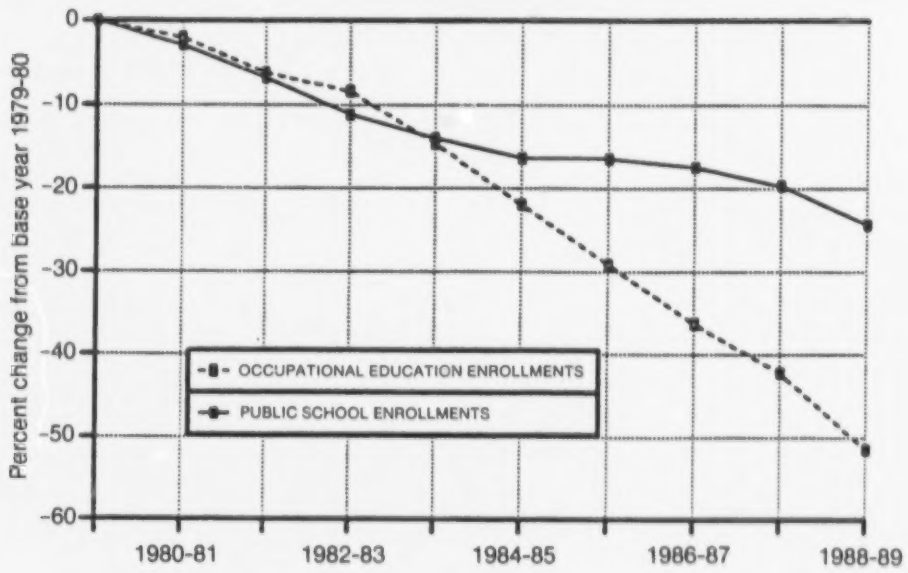
Vocational Education Enrollments Decline More Rapidly Than High School Enrollments

Secondary public school enrollments have been steadily declining during the past several years. Vocational education secondary enrollments have also declined, but at almost double the rate of the public school's enrollment decline.

FIGURE 1

Occupational Education Enrollments and Total High School Enrollments, Percent Annual Change

1979-80 to 1988-89



Source: Vocational Education Secondary Program Statistics, 1988-89, Figure 2. Bureau of Information Systems, Pennsylvania Department of Education.

Special Population Enrollments Decline

The decline for special populations enrolled in vocational education corresponds with an overall reduction in vocational enrollments for the year.

TABLE 4

Enrollments of Special Populations — All Levels

1982-1988

Years	Female	Minority	Disadvantaged	Handicapped
1982-83	211,668	52,565	63,906	19,992
1983-84	198,819	52,215	70,544	20,027
1984-85	189,958	52,685	77,799	21,322
1985-86	185,952	47,632	70,219	18,618
1986-87	176,208	46,311	60,627	17,480
1987-88	147,806	40,685	58,318	17,455
1988-89	129,206	36,897	45,381	14,969

Note: Postsecondary enrollment figures for disadvantaged and handicapped students includes only those students provided with services supported by federal vocational education funds.

Source: Vocational Education Program Statistics, 1988-89, Tables III, IV, and V. Bureau of Information Systems, Pennsylvania Department of Education.

Vocational Education Continues to Serve High Percentage of Special Population Students

Although vocational education enrollments continue to decline, special populations continue participation at a steady pace.

TABLE 5

Secondary, Adult and Postsecondary Special Populations

1987-88 and 1988-89

	1987-88		1988-89	
Level/Program	**Enrollments**	**% of Total**	**Enrollments**	**% of Total**
Secondary (Total)	151,107	—	131,258	—
Female	81,953	54.2%	68,841	52.4%
Minority	26,413	17.5%	23,263	17.7%
Disadvantaged*	45,926	30.4%	41,209	31.4%
Handicapped*	15,755	10.4%	14,678	11.2%
Adult (Total)	77,067	—	60,532	—
Female	32,063	41.6%	26,305	43.5%
Minority	7,569	9.8%	7,079	11.7%
Disadvantaged*	4,394	5.7%	4,172	6.9%
Handicapped*	383	.5%	291	.5%
Postsecondary (Total)	56,570	—	56,800	—
Female	33,790	60%	34,060	60%
Minority	6,703	11.8%	6,555	11.5%

*Does not include students in correctional institutions.

Source: Vocational Education Program Statistics, 1987-88 and 1988-89, Tables 3-5. Bureau of Information Systems, Pennsylvania Department of Education.

Special Needs Students Enrolled In Secondary Vocational Education Programs

Special needs students may be enrolled in a separate vocational education program or in a mainstream program with regular students. In 1988-89, 82.9 percent of the handicapped and 89.9 percent of the disadvantaged students were in a mainstream program.

TABLE 6

Special Needs Students Represent 42.9% of Secondary Vocational Education Enrollments

Program	Total Vocational Enrollments	Handicapped		Disadvantaged	
		Enrollments	%	Enrollments	%
Agriculture Education	6,918	1,007	14.6%	2,038	29.5%
Business Education	26,276	580	2.2%	8,200	31.2%
Health Occupations Education	3,262	394	12.1%	1,232	37.8%
Marketing & Distributive Education	4,564	417	9.1%	1,505	33.0%
Occupational Home Economics Education	6,121	1,671	27.3%	2,538	41.5%
Trade & Industrial Education	44,671	7,299	16.3%	15,587	34.9%
Not Elsewhere Classified	5,464	1,283	23.5%	2,280	41.7%
Consumer & Homemaking Education	32,390	1,983	6.1%	7,691	23.7%
Industrial Arts	540	44	8.1%	138	25.6%
Total*	130,206	14,678	11.3%	41,209**	31.6%

*Does not include enrollments in correctional institutions.
**Includes limited English proficiency enrollments.
Source: Secondary Program Statistics, 1988-89, Table 6. Bureau of Information Systems, Pennsylvania Department of Education.

Adult Enrollments Continue to Decline

Adult vocational education enrollments reached a peak of 81,818 in 1984. Since then, enrollments fluctuated from year to year. The 1989 enrollments reflect the largest decline in recent years (18%) and double the decline from 1987 to 1988 (9%).

TABLE 7

Adult Vocational Education Enrollments 1985-1989

Program	1985	1986	1987	1988	1989	% Change 1988-89
Agriculture Education	4,841	4,619	5,035	5,033	4,491	-11%
Business Education	18,771	26,096	24,330	18,739	18,268	- 3%
Health Occupations Education	5,512	6,643	5,303	4,721	5,077	+ 7%
Marketing & Distributive Education	950	880	929	535	589	+ 9%
Occupational Home Economics Education	3,165	2,839	3,061	2,974	1,727	-42%
Technical Education	3,847	4,217	—	—	—	—
Trade & Industrial Education	33,326	32,962	40,799	40,042	29,178	-27%
Not Elsewhere Classified	369	423	366	239	353	+32%
Consumer & Homemaking Education	2,334	1,702	1,510	1,765	849	-52%
GRAND TOTAL	73,936	80,381	81,333	74,048	60,532	-18%

Note: Technical Education and Trade and Industrial Education combined since 1986-87.
Source: Vocational Education Program Statistics, 1988-89, Table 2. Bureau of Information Systems, Pennsylvania Department of Education.

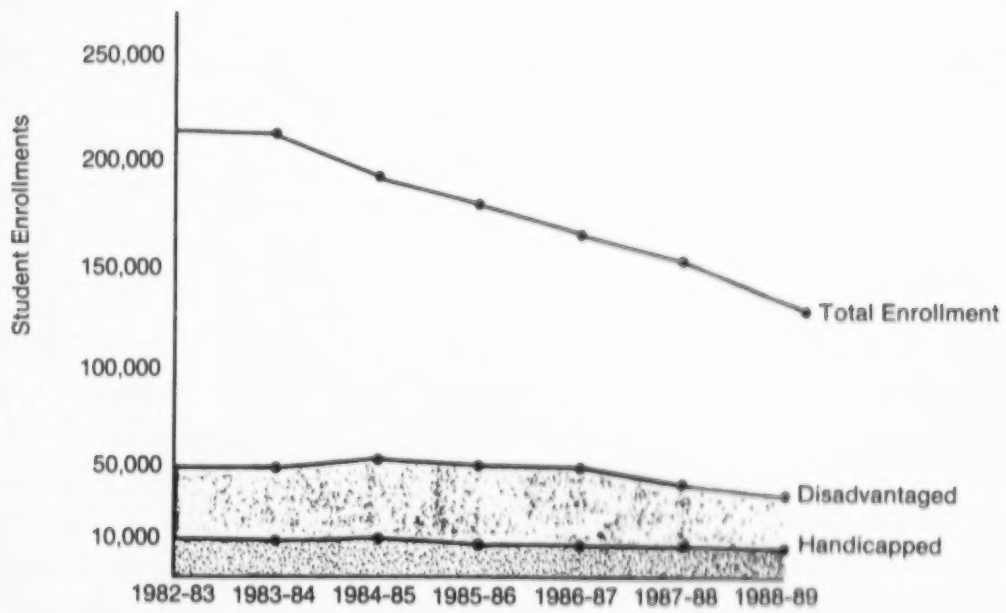
Disadvantaged and Handicapped Secondary Enrollments Remain Stable

Although secondary vocational education enrollments have been steadily declining since 1983-84, the number of disadvantaged and handicapped students enrolled in secondary vocational education has remained relatively constant. While these special populations represent a higher percentage of the total student population than previously, these stable enrollments identify the continued need for vocational education for these students.

FIGURE 2

Disadvantaged, Handicapped and Total Secondary Vocational Education Enrollments

1983-1989



Vocational Enrollments Fluctuate By Level

As illustrated below, enrollments in secondary and adult vocational education programs continue to show a steady decline over the past several years, while postsecondary enrollments remain less stable, and fluctuate year to year.

TABLE 8

Vocational Program Enrollments — All Levels, Selected Years

Level	1979-80	1984-85	1988-89
Secondary	258,913	197,996	131,258
Postsecondary	68,139	93,133	56,800
Adult	94,359	72,963	60,532
TOTAL	**421,411**	**364,092**	**248,360**

Source: Vocational Education Program Statistics, 1988-89, Tables 1-3. Bureau of Information Systems, Pennsylvania Department of Education.

Student Organizations Show Small Decrease in Membership

Occupational skills learned in the classroom and laboratory are enhanced by the leadership experiences gained through participation in a vocational student organization. While the number of vocational student organization chapters increased less than 1%, the number of student members decreased 2.4% since 1989. These slight changes reflect relatively stable membership despite a continuing decline in vocational education student enrollments.

TABLE 9

Vocational Student Organization and Membership

1985-1989

	Chapters					Membership				
Student Organization	**1985**	**1986**	**1987**	**1988**	**1989**	**1985**	**1986**	**1987**	**1988**	**1989**
TSA/AIASA*	34	37	37	41	42	2,585	3,486	6,210	6,203	5,810
DECA	99	91	92	89	90	4,359	4,147	4,450	4,034	3,676
FBLA	265	269	285	293	300	10,756	11,064	11,015	10,984	11,000
FFA	203	190	209	202	191	10,776	9,952	9,500	8,565	7,989
FHA-HERO	124	116	123	131	125	2,919	2,672	2,948	2,795	2,606
HOSA	46	50	41	49	51	1,826	1,932	1,761	1,665	1,642
VICA	83	106	107	106	87	22,572	23,863	22,044	22,089	22,307
TOTALS	854	859	894	911	886	55,793	57,116	57,928	56,335	55,030

*AIASA, the American Industrial Arts Student Association, was renamed the Technology Student Association, effective June, 1989.

Source: Bureau of Vocational and Adult Education, Pennsylvania Department of Education.

Secondary Vocational Education Graduates Successfully Placed

Preliminary data indicate 89 percent of Pennsylvania's 1989 vocational education graduates were successfully placed in one of the following: an occupation related to their vocational training, an occupation unrelated to their vocational training, active military service or a program of higher education.

TABLE 10

Graduates of Secondary Vocational Programs 1988-89

				—Employed, Military, Pursuing Education—									
Program	Total Surveyed	Total Response #	Total Response %	Empl Relat	Empl Unrel	Mil Serv	Purs Edu	Total Gainfully Placed #	Total Gainfully Placed %	Unemp Looking #	Unemp Looking %	Unemp Not Looking #	Unemp Not Looking %
Agriculture Education	1,581	830	52.5%	258	292	51	155	756	91.1%	43	5.2%	31	3.7%
Business Education	9,450	5,268	55.7%	1,273	1,345	126	2,003	4,747	90.1%	341	6.5%	180	3.4%
Health Occupations Education	1,092	648	59.3%	214	140	6	204	564	87.0%	48	7.4%	36	5.6%
Marketing & Distributive Education	1,484	749	50.5%	193	191	28	230	642	85.7%	66	8.8%	41	5.5%
Occupational Home Economics Education	1,498	685	45.7%	204	178	23	137	542	79.1%	96	14.0%	47	6.9%
Trade & Industrial Education	12,998	6,922	53.3%	2,323	2,223	524	1,140	6,210	89.7%	541	7.8%	171	2.5%
Not Elsewhere Classified	2,096	1,040	49.6%	370	309	55	231	965	92.8%	42	4.0%	33	3.2%
TOTALS	30,199	16,142	53.5%	4,835	4,678	813	4,100	14,426	89.4%	1,177	7.3%	539	3.3%

Source: VEMIS Follow-up of Completers of Approved Secondary Programs, Pennsylvania Summary, 1987-88. Bureau of Information Systems, Pennsylvania Department of Education.

Adult Vocational Education Graduates Achieve 83% Placement Rate

Survey data reveals 83 percent of Pennsylvania's adult vocatoinal education graduates were successfully placed in one of the following: an occupation related to their vocational training, an occupation unrelated to their vocational training, active military service or a program of higher education.

TABLE 11

Adult Vocational Education Graduates 1988-89

Program	Total Surveyed	Total Response #	Total Response %	—Employed, Military, Pursuing Education— Empl Relat	Empl Unrel	Mil Serv	Purs Edu	Total Gainfully Placed #	Total Gainfully Placed %	Unemp Looking #	Unemp Looking %	Unemp Not Looking #	Unemp Not Looking %
Agriculture Education	14	11	78.6%	4	2	0	1	7	63.6%	0	.0%	4	36.4%
Business Education	1,166	712	61.1%	260	220	1	55	536	75.3%	86	12.1%	90	12.6%
Health Occupations Education	1,578	933	59.1%	751	48	1	57	857	91.9%	29	3.1%	47	5.0%
Marketing & Distributive Education	37	25	67.6%	9	9	0	1	19	76.0%	4	16.0%	2	8.0%
Occupational Home Economics Education	189	78	41.3%	19	19	0	4	42	53.8%	20	25.6%	16	20.5%
Trade & Industrial Education	1,933	990	51.2%	429	337	7	55	828	83.6%	98	9.9%	64	6.5%
TOTALS	4,917	2,749	55.9%	1,472	635	9	173	2,289	83.3%	237	8.6%	223	8.1%

Source: VEMIS Follow-up of Completers of Adult Programs, Pennsylvania Summary, 1988-89. Bureau of Information Systems, Pennsylvania Department of Education.

Earnings of Vocational Completers

Earnings of 1988 vocational education graduates reflect the trends in the general economy. Earnings of males exceed those of females in almost every occupational area and level of preparation.

TABLE 12

Earnings of Employed 1988 Vocational Completers Compared by Sex, Level, and Program

Level/Program	Average Hourly Salary Female	Male
SECONDARY	$5.54	$6.61
Agriculture Education	4.63	5.84
Business Education	5.75	6.34
Health Occupations Education	5.34	5.47*
Marketing & Distributive Education	5.05	5.68
Occupational Home Economics Education	4.53	5.26
Trade and Industrial Education	5.44	6.77
Not Elsewhere Classified	5.33	6.58
ADULT	7.69	9.43
Business Education	6.11	8.65*
Health Occupations Education	8.22	8.21
Occupational Home Economics Education	5.27*	6.91*
Trade and Industrial Education	7.04	9.60

Note: The average hourly salary was computed from salaries reported in a survey of graduates by respondents employed 35 or more hours per week in a field related to their training.

*Less than 30 respondents.

Source: Vocational Education Statistics, 1988-89, Bureau of Information Systems, Pennsylvania Department of Education.

JTPA Clients Receive Vocational Education Services

Job Training Partnership Act (JTPA) clients receive training in area vocational-technical schools, comprehensive high schools and community colleges on a contractual basis with Private Industry Councils. These vocational education agencies are given preference in supplying vocational training to JTPA clients. This training is funded by the Governor's Special Grant for Education (8% Funds) of JTPA. In 1988-89, 67 percent of those enrolled in JTPA programs completed the training. This is a decrease of 3 percent over the previous year.

TABLE 13

JTPA Enrollments and Completers

1988-89

	Enrollments	Completers
GRAND TOTAL	13,590	9,159
PROGRAM		
AGRICULTURE EDUCATION—TOTAL	18	12
Horticulture	18	12
BUSINESS EDUCATION—TOTAL	530	345
Accounting, bookkeeping and related programs	79	61
Business data processing and related programs	14	11
Computer and console operation	36	16
Data entry operation	37	20
General office and related programs	155	86
Secretarial and related programs	33	24
Secretarial, executive	2	1
Secretarial, legal	4	0
Secretarial, medical	32	22
Stenographic	10	10
Word processing	112	86
Other business education	16	8
HEALTH OCCUPATIONS EDUCATION—TOTAL	840	468
Dental services	49	24
Diagnostic and treatment services	25	19
Health unit coordinating	12	11
Medical assisting	41	15
Medical laboratory technology	32	15
Mental health/human services assisting	42	28
Nursing	206	117
Nursing related services	102	67
Rehabilitation Service	13	1
Practical nursing	310	170
Other health occupations education	8	1
MARKETING AND DISTRIBUTIVE EDUCATION—TOTAL	5	1
General Marketing	3	1
Other marketing and distributive education	2	0
OCCUPATIONAL HOME ECONOMICS EDUCATION—TOTAL	144	95
Homemaker's aide	27	11
Food production, management and services	94	71
Other occupational home economics education	23	13
TRADE AND INDUSTRIAL EDUCATION—TOTAL	481	300
Air conditioning, heating and refrigeration technology	10	7
Building and property maintenance	26	10
Carpentry	13	12
Computer and information sciences	41	22
Cosmetology	16	7
Data processing	19	4
Drafting and design technology	5	1
Drafting	27	17
Electrical and electronic technology	28	25
Electrical and electronics equipment repair	23	13
Electrical and power transmission installation	28	22
Electromechanical instrumentation & maintenance technology	15	15
Graphic and printing communications	33	21
Heating, air conditioning and refrigeration mechanics	16	10
Machine shop	33	21
Industrial equipment maintenance and repair	28	5
Security services	7	7
Vehicle and mobile equipment mechanics and repair	53	35
Welding	25	23
Other trade and industrial education	35	23
NOT ELSEWHERE CLASSIFIED—TOTAL	11,572	7,938
Adult basic education	4,401	3,139
English as a second language	244	209
General educational development	4,902	3,397
Other not elsewhere classified	2,025	1,193

Source: Pennsylvania Department of Labor and Industry.

Customized Job Training for Pennsylvania Employers

In 1988-89, Pennsylvania's Customized Job Training (CJT) Program served 120 Pennsylvania employers. More than 11,000 persons participated in CJT funded projects. These projects provided training for new employees and for the upgrading and/or promotion of experienced employees.

The CJT program, initiated in 1982-83, is fully supported by state funds. Training is provided in classrooms, shops/laboratories, and businesses by AVTSs, community colleges, intermediate units, school districts, private post-secondary institutions, four-year colleges, and other service providers.

TABLE 14

Pennsylvania CJT Program Summary

1982-83 to 1989-90

Year	New Jobs	Promotions or Upgrades	Total Trained	Expenditure (millions)	Employers Served	Projects Funded
1982-83	1,740	421	2,161	$ 1.9	50	85
1983-84	1,328	1,317	2,645	$ 4.6	58	111
1984-85	1,739	5,424	7,163	$ 6.1	105	124
1985-86	3,052	12,919	15,971	$11.9	162	164
1986-87	4,436	25,270	29,706	$13.5	153	162
1987-88	4,826	14,627	19,453	$13.5	156	198
1988-89	5,623	5,443	11,066	$11.7	120	120
TOTALS	22,744	65,421	88,165	$63.2	804	964

Note: Some companies participated in more than one training project.
Source: Bureau of Vocational and Adult Education, Pennsylvania Department of Education.